

BICYCLE AND PEDESTRIAN FACILITIES STUDY & DEVELOPMENT

PAWTUXET RIVERWALK Warwick, Rhode Island



SEPTEMBER 2007

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INTRODUCTION

The City of Warwick submitted a project proposal form to the Rhode Island State Planning Council as part of the Fiscal Year (FY) 2003-2005 Transportation Improvement Program (TIP). The project proposal described that a scenic pedestrian Riverwalk along the Pawtuxet River, along the corridor from the Interstate Route 95 to the Washington Secondary Bike Path, should be studied and developed for consideration of design. The project application was approved by the Transportation Advisory Committee (TAC) and included in the FY 2003-2005 TIP. The Rhode Island Department of Transportation (RIDOT) hired Pare Corporation (PARE) for consultant services for the study and development phase of this project.

Supporting Documentation

This proposed Riverwalk supports local and state goals and plans. The following Goals and Policies are listed in Chapter 3 of the Circulation and Transportation Element section of the City's Comprehensive Plan and are also addressed within this study:

General

- *Provide the City of Warwick with a balanced transportation system that meets the needs of its citizens by developing a related network of local roads and highways, public transportation, rail service, parking, pedestrian walkways, and bicycle travel ways.*

Public Transportation

- *Work with the R.I. Department of Transportation, the Public Transit Authority, the Division of Planning, Department of Administration and adjacent communities to increase public transit options and to expand public transit service.*

The following Goals and Objectives listed in Chapter 7 of the Natural Resources, Open Space, and Recreation section of the City's Comprehensive Plan are met by this project:

- *Foster public/private efforts to enhance the City's neighborhood oriented recreation facilities.*
- *Preserve and maintain freshwater and saltwater shore public access points.*
- *Foster, where possible, bicycle/pedestrian linkages and /or "green corridors" between existing open space and recreation nodes.*



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- *Identify and seek a variety of funding sources to implement a program of open space acquisition.*
 - *Further use Federal and State funds for recreational needs.*
 - *Maintain high standards of urban design and aesthetics in public open spaces.*

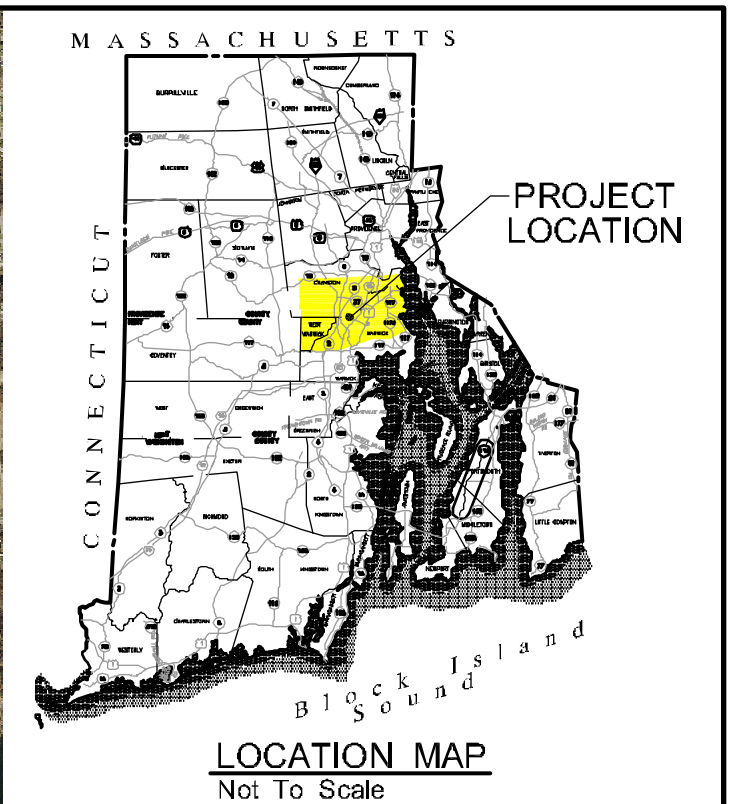
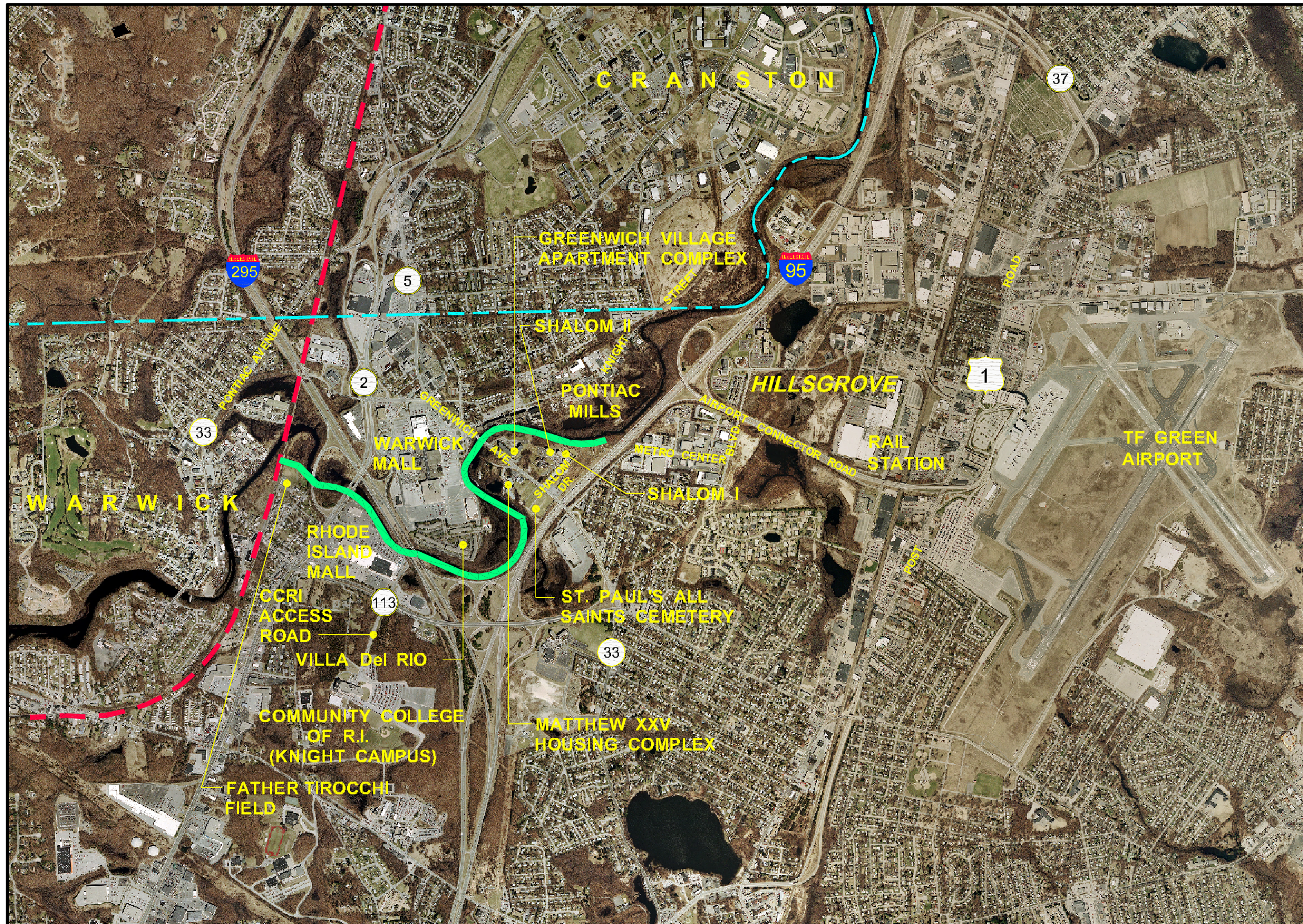
Additionally, The 2001 Update of the State Guide Plan/Element 611/Ground Transportation Plan states many specific goals related to transportation land use and development that this proposed project would implement. These goals include:

- *To elevate pedestrian transportation to the highest level.*
- *To encourage alternatives to single occupant auto travel.*
- *To provide alternative modes of transportation for short distance, high traffic situations.*
- *To make the transportation system accessible to people with mobility limitations and other disabilities.*
- *To utilize transportation programs and projects to maintain and enhance environmental quality and community livability.*
- *To utilize transportation to support tourism.*
- *To expand alternative means of transportation to colleges.*
- *To provide convenient intermodal connections, i.e. airport to all other modes.*

This report was a combined effort by the PARE team, RIDOT, local City officials, and business and property owners. Relevant and available data, reports, and mappings were obtained from State, City, and local agencies and organizations. Site visits were conducted and the existing conditions documented, tabulated, and organized.

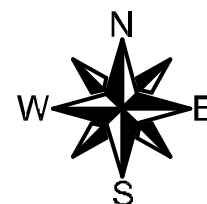
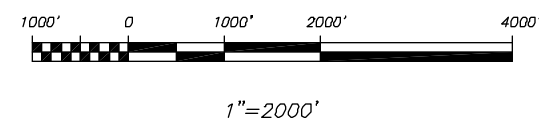
The total subject study area of the proposed Pawtuxet Riverwalk project is shown in the Overall Site Plan. (Figure 1, page 3) To further highlight details of the existing conditions for the Riverwalk, the project has been divided into four segment sections as shown the Segment Location Plan. (Figure 2, page 4)





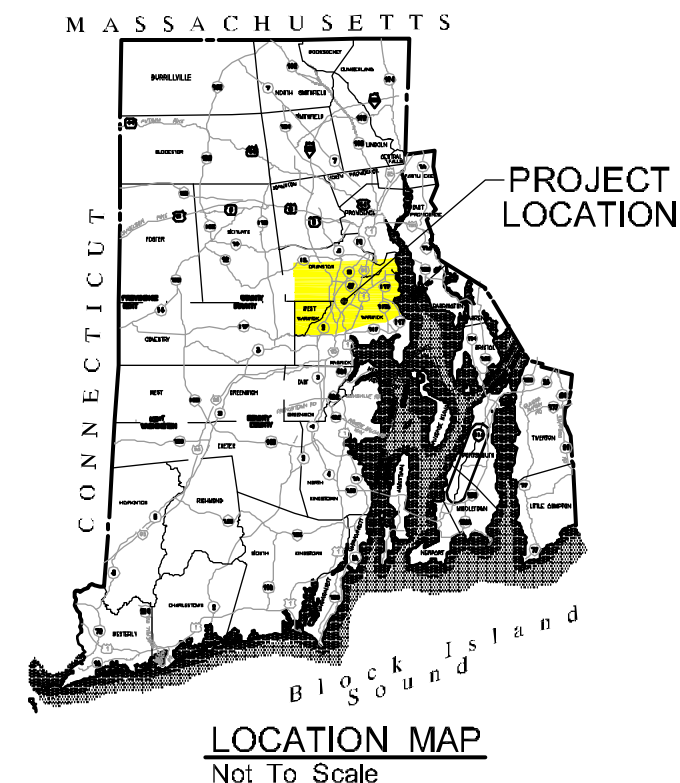
LEGEND

- EXISTING WASHINGTON SECONDARY CORRIDOR BIKE PATH
- RIVERWALK EXTENTS
- APPROXIMATE CITY LINE



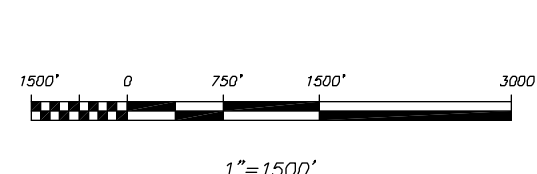
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Warwick, Rhode Island
OVERALL SITE PLAN



LEGEND

- EXISTING WASHINGTON SECONDARY BIKE PATH
- RIVERWALK EXTENTS
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Warwick, Rhode Island
SEGMENT LOCATION PLAN

Pertinent criteria such as roadway and pedestrian crossings, roadway intersections, wetlands, adjacent properties, and other proximate facilities were examined, with the pedestrian's needs in mind, to develop and evaluate the alignments for the Riverwalk. Design challenges included minimizing the impacts on parking and the environment, providing direct and indirect access to the river, and consideration of the associated cost factors. Consequently, included in this study is an evaluation of engineering and structural alternatives for the at-grade walkway and pedestrian bridges, an assessment of the environmental impacts, an analysis of public access areas, an identification of historic preservation opportunities, and a preliminary opinion of probable construction cost for each of the proposed route alternatives and elements. In addition, the need for potential right-of-way acquisitions and easements was taken into consideration. Subsequently, after review of all the compiled information, the most appropriate design has been identified, presented, and recommended.

The alternatives were evaluated for their viability as individual segments as well as continuous sequences. The following text is organized into sections describing each of the four Riverwalk segments, as indicated on the included maps. The existing conditions of each of the Riverwalk segments are described and evaluated, and various constraints are identified in each one.

Visual Analysis

The vision for Pawtuxet Riverwalk encompasses a scenic pedestrian riverwalk along the Pawtuxet River in the corridor between the vicinity of the historic Pontiac Mills vicinity and the Washington Secondary Bike Path. The project will serve to link community services and create a pedestrian network with access to a variety of destinations. The overall character of the project corridor is diverse. Portions of the proposed route lie within dense woodlands while other segments parallel roadways and parking lots. Some sections of the proposed route lie within miry wetlands that would be impassable during the wet season without improvements.



OVERVIEW

Project Description

The Pawtuxet River flows through the center of Rhode Island and has a watershed area that covers approximately 230 square miles. The watershed area encompasses ten Rhode Island municipalities. The average width of the Pawtuxet River is approximately 100 feet, with an average depth of three feet. The main stem of the river is nearly 12 miles long and flows east through West Warwick, Warwick, and Cranston. The Pawtuxet River discharges into the Pawtuxet Cove, which is situated on the tidal Providence River. The river's elevation drops approximately 75 feet between the Pontiac Mills dam site and the Pawtuxet Cove.

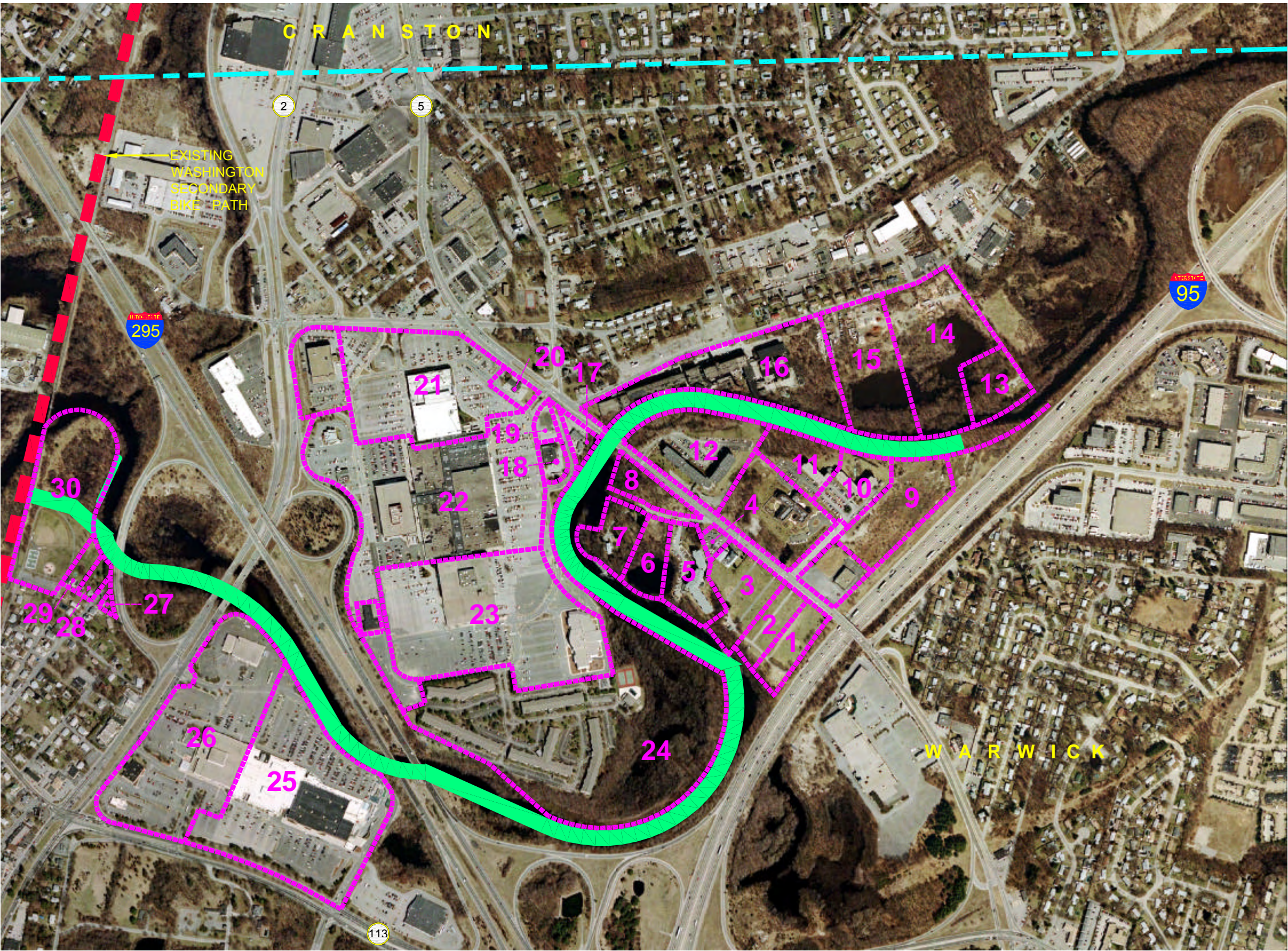
The topography consists of low lands, the Pawtuxet River Valley, and adjoining gently sloping coastland. Large tracks of wetlands with small ponds are situated within the project area. The Environmental Permitting section of the report further outlines the location of the wetlands, the 100-year-floodplain, and addresses the associated potential environmental impacts for each of the four segments.

Approximately two miles of the Pawtuxet River's corridor is included within the project limits. The river is inaccessible in some sections within this stretch where trees, bushes, and other vegetation have become quite overgrown. Litter and illegal dumping is evident along portions of the river. Fences have been installed by abutting property owners at some locations. There appears to have been a general lack of maintenance of the environment along this section of the river corridor. There is limited landscaping. Potentially beautiful views of the Pawtuxet River are obscured. There are sites and areas that have great potential to be positive attributes to the region. Few people realize that the river is even nearby; it is hidden amidst the parking lots, apartment complexes, and highways. There is a definite need for a visible, aesthetically pleasing and accessible greenway in this area.

The overall study area, bordered by the riverbanks, is located within a mixed use of residential neighborhoods, historical districts, commercial establishments, industrial areas, recreational facilities, cemeteries, open water and wetland sites in an urban setting.

Property owner information was obtained from the City's Assessor Maps. There are approximately nineteen parcels of land, not including those parcels owned by the City and State, which could be impacted by the proposed Riverwalk. (Figure 3, page 7)

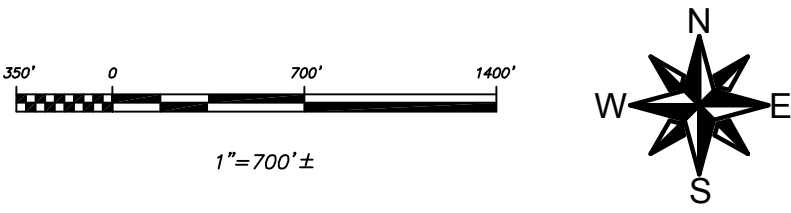




PLAN DESIGNATION	PLAT/ LOT	OWNER
1	271/170	All Saints Cemetery
2	271/168	All Saints Cemetery
3	271/169	St. Paul's Lutheran Church Cemetery
4	271/167	St. Paul's Lutheran Church
5	271/189	Matthew XXV Associates LP
6	271/2	Helen Izzi Life Estate
7	271/174	Helen Izzi Life Estate
8	271/179	Helen Izzi Life Estate
9	271/191	Jewish Home for Aged of RI
10	271/192	Shalom I Housing Inc.
11	271/193	Shalom II Housing Inc.
12	271/3	Greenwich Village Association
13	275/13	Petro Holdings Inc.
14	275/52	Towanda Association Inc.
15	275/38	Towanda Association Inc.
16	274/204	Happy Mill LLC
17	274/229	Harold N. & Sharon M. Knickle
18	386/10	Warwick Mall LLC
19	386/11	Warwick Mall LLC
20	386/8	Warwick Mall LLC
21	386/6	May Centers Associates Corp.
22	386/4	Warwick Mall LLC
23	386/5	Jordon March Inc.
24	272/1	Warwick Associates
25	264/6	GLL Rhode Island Mall LP
26	264/1	Sears & Roebuck & Co.
27	263/96	William & Marie Diamonte
28	263/34	Felici Life Estate
29	263/33	Alfred L. & Dorothy A. Lancelotta
30	263/22	City of Warwick

LEGEND

- EXISTING WASHINGTON SECONDARY BIKE PATH
- RIVERWALK EXTENTS
- APPROXIMATE CITY LINE
- LOT LIMITS





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PROPERTY OWNERS

Some of the proposed access points are on private property. Right-of-way (ROW) for these areas will have to be formalized through easements. In addition, permanent easements will be required for all locations where the Riverwalk route will pass through privately owned property. The extents of the permanent easements should be wide enough to encompass the actual Riverwalk itself and to provide adequate space for the Town to access, maintain and repair the Riverwalk. The location, magnitude, and type of required easements will be determined during the design phase of the project.

Letters, in support of the Riverwalk project, were received by the City from the Jewish Seniors Agency of Rhode Island, Shalom Housing I and II, the development team of D'Agostino Izzo Quirk Architects Inc. and the owners of the Pontiac Mills, the Picerne Real Estate Group representing The Greenwich Village Apartments, Community College of Rhode Island (CCRI), City of Warwick Department of Human Services, Buttonwoods Senior Center, and the Rhode Island Public Transit Authority (RIPTA).

There are a number of RIPTA stops within the Riverwalk vicinity. These stops include the Warwick and Rhode Island Malls, two of RIPTA's major transit destinations. The proximity of the Riverwalk to these stops could encourage the use of the RIPTA transit service by allowing a pedestrian friendly and safe way to access its convenience. Therefore the Riverwalk would not only provide pedestrian mobility for area residents but would improve their access to public transit services.

Major routes that skirt and traverse this study area are Interstate Routes 295 and 95, and State Highways Route 2 (Bald Hill Road), Route 5 (Lambert Lind Highway/Greenwich Avenue), and Route 113 (East Avenue).

In addition to investigating the development of safe, attractive, and continuous alternatives for a Riverwalk route along the Pawtuxet River between Interstate Route 95 and the existing Bike Path, it is also the intent of this proposed Riverwalk feasibility study to link community services and to create a pedestrian network with connections to various destinations within the project locality. A variety of origins and destinations exist within the project limits. (Figure 1, page 3) They include, from east to west along the river's edges, the Shalom I and II Housing buildings, the Pontiac Mills and Village, the Greenwich Village Apartments, the Matthew XXV Housing Complex, the St. Paul's All Saints Cemetery, the Warwick Mall, the Villa Del Rio Apartments, the Rhode Island Mall, the CCRI, the Father Tirocchi Field, and the Washington Secondary Bike Path. Within two



miles east of the designated project limits are the T.F. Green Airport and the site for the proposed Intermodal Rail Station.

The proposed Riverwalk would provide an alternate mode of local transportation, between these origins and destinations. A diverse pedestrian population resides within, and frequents, the defined project area. The pedestrian population existing within the project area includes low to moderate income elderly, disabled persons, families, and students. The Riverwalk would provide safe mobility for the local population, particularly recreational users and those that do not own or use vehicles. In addition, for the population that usually requires a car to get to the local area, it would provide the option of safely walking the short distances to the target destinations, thereby avoiding high traffic situations. The close proximity and connection to the Washington Secondary Bike Path would also attract bicyclists and other modes of transportation to the Riverwalk.

As stated earlier, public access points to the river exist along the project extents. At the west end, the Father Tirocchi Playfield is a nine-acre park that includes a ball field, tennis, and basketball courts. This park is located between the Pawtuxet River, the now abandoned Providence & Worcester (P & W) Railroad and the current site of the Washington Secondary Bike Path on the Warwick-West Warwick town line. There is parking available at this location. Pedestrians, bicyclists, and automobiles are all able to access this site. In addition, canoeists utilize this location as an access point to the Pawtuxet River. Not too far from this park, the Washington Secondary Bike Path also offers a limited amount of parking near the Interstate Route 295 overpass.

Just downstream from the Greenwich Avenue (Route 5) Bridge is the historic Pontiac Mills complex, a well-known landmark in the area. Parts of the building complex are greatly deteriorated, yet unique retail shops currently occupy other sections. This location also offers plenty of parking in a neighborhood where public parking is almost non-existent. Canoe trips are also known to leave from the mill complex.

This report investigates the possibility of providing additional points for river and Riverwalk access and for parking. Existing sites that could be developed for parking are at the Warwick and Rhode Island Malls and along Shalom Drive.

A variety of historical sites also exist in this area. The Pontiac Mill Village Neighborhood, the Old Greenwich Avenue Bridge, and the Washington Corridor Bridge are sites that are listed as being



registered with local, state, and/or federal historical registries per *“The Pawtuxet River Corridor Study - Final Report”*, prepared by the University of Rhode Island, Graduate Curriculum in Community Planning and Area Development in the Fall of 1993. The Pontiac Mills site has been placed on the City Register of Historically Zoned Properties. The protection, preservation, and reuse of these cultural resources and those also located along the river should be carefully considered in the future plans for the development of the Riverwalk.

The proposed Riverwalk encounters five (5) major and one (1) minor bridge structures along its route each spanning over the Pawtuxet River. These major structures, beginning with the furthest east and moving west, are Interstate Route 95, Route 5 (Greenwich Avenue), Interstate Route 295 Northbound and Southbound, Route 2 (Bald Hill Road), and the Interstate Route 295 Interchange 2 Southbound off ramp. Just west of the Greenwich Avenue/Route 5 Bridge there are abandoned abutments left from the original Old Greenwich Road Bridge that was built in the first half of the 20th century. These abutments are made of stone and are overgrown with trees and dense bushes that keep them from being clearly visible from either the Warwick Mall parking lot or Route 5. Within the project limits, the only existing minor bridge structure over the Pawtuxet River is at the Pontiac Mills complex. The structure is a narrow concrete walkway that spans from a wooded area on the south side of the river to a mill building on the north side.

A variety of different Riverwalk compositions and structures, bridge types, and slope stabilization methods were examined and included in this study. To accommodate pedestrians and bicyclists alike, the Riverwalk will consist of materials that are conducive to both kinds of travel. The width will be ten (10) feet minimum, as required by the *“The American Association of State Highway and Transportation Officials - Guide for the Development of Bicycle Facilities”*, 1999 Edition (AASHTO) for Shared Use Path.

This study has also investigated the feasibility of providing bridges that would allow for connections between destinations on opposite sides of the river. Additionally, landscape architect schemes, including scenic overlooks and bump outs combined with soft-and hard-scape items are examined for installation at the most viable and aesthetic locations along the Riverwalk. Landscape amenities could include lighting, landscaping, benches, signage, and trash receptacles.



Environmental Permitting

The proposed Pawtuxet Riverwalk, located in Warwick, Rhode Island is within the Rhode Island Department of Environmental Management (RIDEM) regulatory jurisdiction. RIDEM's "Rules and Regulations Governing the Administration and Enforcement of the Freshwater Wetlands Act" April 1998, would apply to the approved recommendations as outlined in this report. The RIDEM would coordinate with the Army Corps of Engineers Programmatic General Permit Program for required federal permits, including a Water Quality Certificate. Final report recommendations would involve impacts to regulated wetlands including the Pawtuxet River, 200-foot Riverbank Wetland, forested wetlands, swamps, and 50-foot Perimeter Wetlands.

The proposed Riverwalk is located within the Pawtuxet River watershed. The main stem of the Pawtuxet River is the only water body located along the proposed Riverwalk. According to the FEMA Flood Insurance Rate Map (445409 0002D) for the City of Warwick, RI, Kent County dated April 16, 1991, the majority of the proposed Riverwalk is located within the 100-year floodplain with an elevation (NGVD 1929) of 29 feet in the northeastern corner of the Riverwalk project area and 38 feet in northwestern corner of the project area. The remainder of the proposed Riverwalk is located within the 500-year floodplain. According to Rhode Island Geographic Information System (RIGIS), there are no mapped rare species or rare species habitat within the vicinity of the proposed Riverwalk.

The proposed project will include wetland impacts as a result of the construction of a 10-foot Shared Use Path, elevated timber walkway structures, bridges, scenic overlooks, sidewalks, and landscaped areas.

Based on the criteria established, PARE determined that the best option for the City would be to focus the available funding on the section along the Pawtuxet River west of the Interstate Route 95 and east of the Washington Secondary Bike Path. Physical connections to landmarks and destinations beyond these limits are addressed in the conclusion of this report. By concentrating on this proposed section of the Pawtuxet River, PARE believes that the City will be best served in the quality and the success of the Riverwalk product. This study analyzes alternatives and makes recommendations for the City's review and assessment. The City will be able to make a best selection based on cost, constructability, and feasibility in terms of easements and permitting. The creation of the proposed Pawtuxet Riverwalk would provide the public with increased access to the



Washington Secondary Corridor Bike Path from points east. It would also create connections between the Pawtuxet River, the Warwick and Rhode Island Malls, parks, industrial sites, and residential, commercial, and historical districts. Public access and increased recreational usage along the river and adjoining sites would also be promoted.

The preliminary opinion of probable construction cost is provided in Appendix B, with an individual breakdown of the items and associated costs to build the proposed Pawtuxet Riverwalk according to each Segment and its corresponding alternatives. This preliminary opinion does not include the costs related to environmental permitting efforts or property right-of-way acquisitions.



SEGMENT 1

Description

This approximate 2,100-foot segment was studied for the possibility of constructing a Riverwalk beginning west of the southbound traffic lanes of Interstate 95 and ending at Route 5/Greenwich Avenue Bridge. (Figure 4, page 14) It was observed in the field that attempting to continue eastward and bridge over or tunnel under Interstate 95 was not a practical means for connecting to Metro Center Blvd. and subsequently T.F. Green Airport. Instead, the investigation effort was put forth in developing a logical and practical Riverwalk terminus, suitable for parking, in this vicinity.

Existing Conditions

Shalom Drive is a city owned and maintained road that runs parallel to Interstate 95 and provides access, from Route 5, to Shalom I and II Apartments. There is an existing crosswalk and signal with pedestrian push buttons at the intersection of Shalom Drive with Route 5 (Photo 1). Crash reports in the vicinity of this intersection for 2003-2005 were obtained from the RIDOT Electronic Accident Reporting System (EARS) to assist in providing locations for at-grade crossings for access to the Riverwalk. The EAD provides

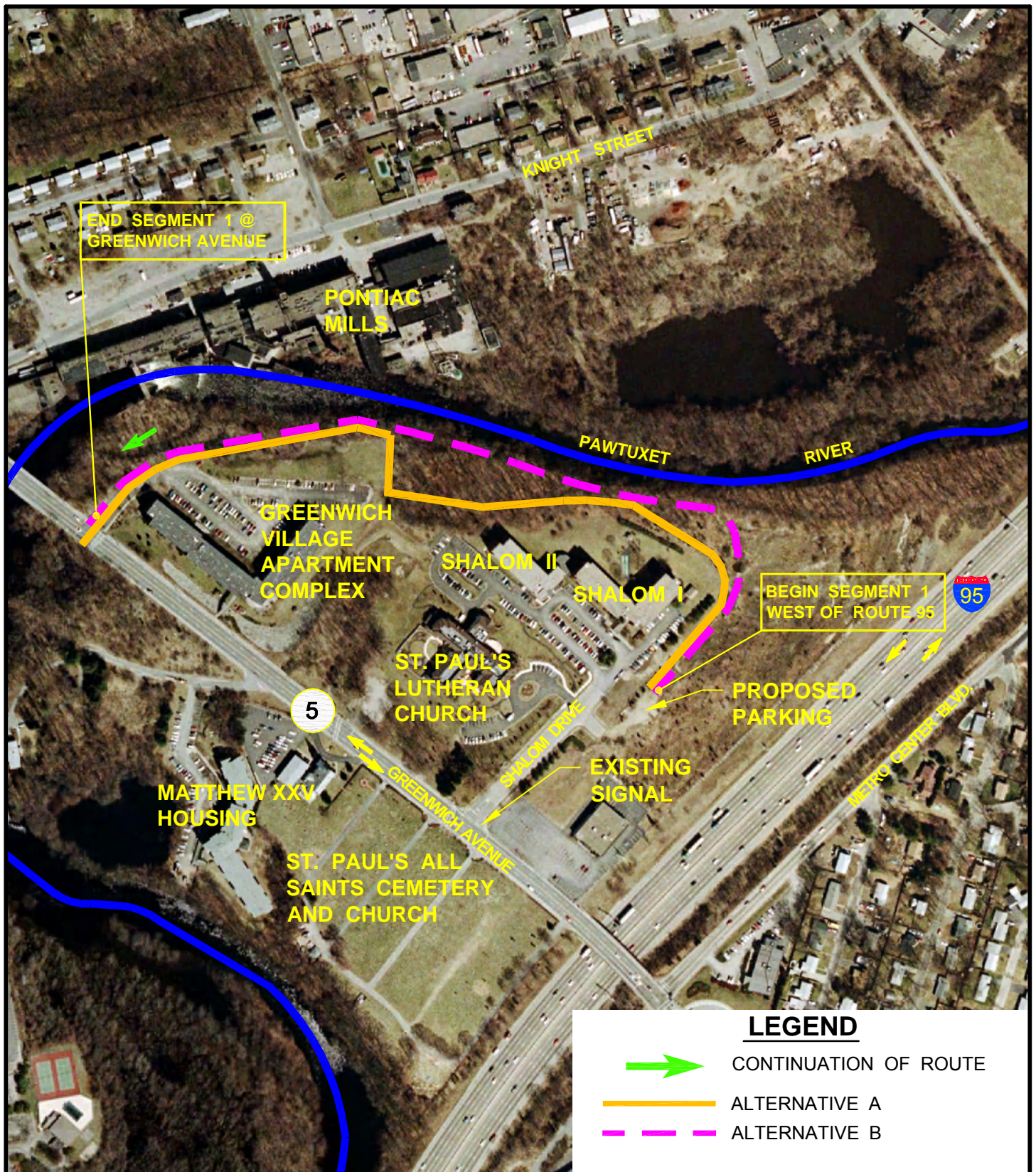


Photo 1: Intersection Shalom Dr. and Route 5.

information regarding date, time, and location of the crashes. Referring to Appendix A, Crash Data, there were six crashes reported in the Year 2002, four in the Year 2003, and two in Year 2004. The majority of the crashes were rear end collisions in daylight, with dry road conditions and with minimal injuries associated with the crashes. RIDOT is in the process of preparing plans for Highway Improvements to Route 5 that include upgrading the signal at this location. These future modifications will presumably result in a safer intersection and crossing for vehicles and pedestrians.

Resident parking spaces are located along the front and side of the Shalom I building. It was discovered that to the southeast of these paved parking lots is a parcel of land that appears well suited for parking and general access to the river. According to the City's Assessor's mapping, this property is owned by the Jewish Home For Aged of RI and Shalom Housing, Inc. (Figure 3, page 7).

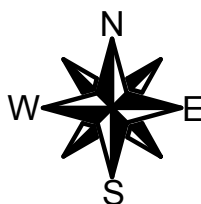




Scale: 1"= 350'±



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PAWTUXET RIVERWALK
Warwick, Rhode Island
SEGMENT 1

On the north side of the Pawtuxet River is the Pontiac Mills complex. This complex is situated at the very edge of the river, thereby making it impossible to have at grade passage along the river edge on the north side of the river. Although the Pontiac Mills complex does currently house some business tenants, the majority of the complex is unused and in marginal condition (Photo 2).



Photo 2: Pontiac Mills



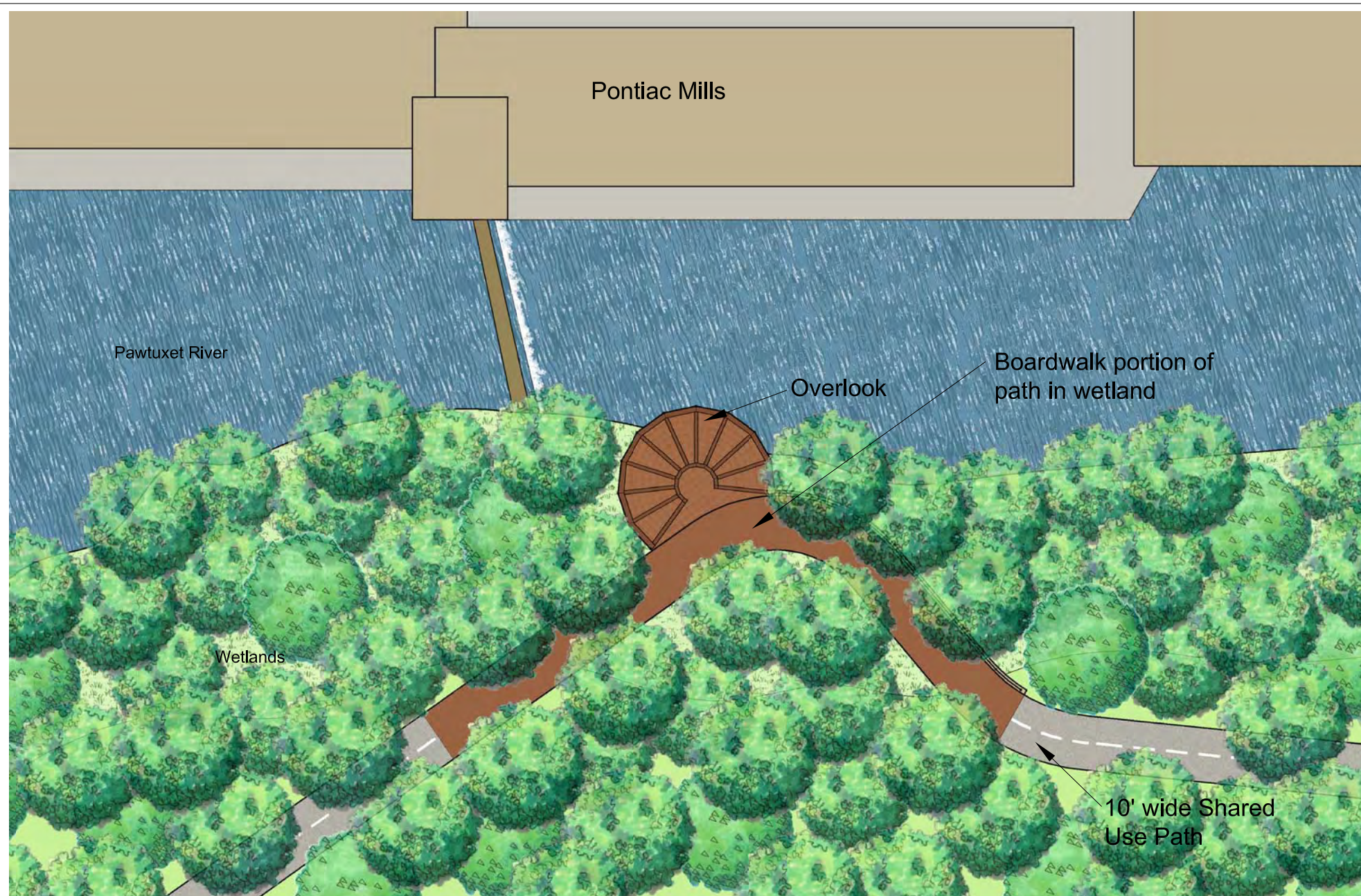
Photo 3: Pontiac Mills pedestrian bridge.

There is an existing concrete pedestrian bridge spanning the river at one of the mill buildings (Photo 3). It is not advised that this bridge be considered for use as a part of the Riverwalk for varied reasons. Primarily, the elevated concrete walkway is not publicly accessible, at this time, from the Pontiac Mills. The walkway spans from a wooded lot of land on the south side of the river to a doorway in one property of the mill buildings on the north side of the river.

In addition, the structural integrity of the concrete bridge is unknown. From a cursory examination, the bridge appears to require considerable repairs. The railings on each side exhibit significantly rusted steel and the concrete displays discoloration and spalling. Invasive concrete tests would be required to determine the strength and condition of the existing concrete. A steel pier bent support is located about the mid span of the bridge and was observed to have significant rust deterioration. For the purposes of this study, it is assumed that the support would require replacement before the bridge could be utilized for pedestrian passage. Finally, the concrete bridge is located over a very fast moving waterfall. This makes the accessibility of the walkway more difficult, and therefore more costly, for testing, investigation, and renovation purposes. Because there are no definitive revitalization plans for the mill complex on record, this report will not incorporate the Pontiac Mills complex into the river walk scheme. It is recommended that access to the concrete walkway be restricted from the Riverwalk.

Although access to the concrete bridge would be restricted, it was noted that the view of the waterfall passing beneath it is a feature worth some attention. It is proposed that a location slightly downstream of the waterfall be utilized for a scenic overlook (Figures 5 & 6, pages 16 & 17).





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BICYCLE AND PEDESTRIAN
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OVERLOOK AT PONTIAC MILLS



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BICYCLE AND PEDESTRIAN
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 Warwick, Rhode Island
OVERLOOK AT PONTIAC MILLS

The Greenwich Village Apartments property abuts the proposed Riverwalk as it proceeds westward along the south bank of the Pawtuxet River (Photo 4). As noted previously, in a letter to the City of Warwick, the management of the Greenwich Village Apartments property has demonstrated strong support for the Riverwalk project and remarked that the Riverwalk would be a benefit to the residents.



Photo 4: Greenwich Village Apartment parking lot.

Alternatives

Alternative A

The suggested start of this Riverwalk alternative is adjacent to the proposed parking area off of Shalom Drive. This location is south of the Pawtuxet River southern riverbank and northeast of the



Photo 5: Behind Shalom I and II near River's edge

Shalom I Apartments. Westward travel, parallel to the river, is possible at-grade not far from the river's edge. The river would be visible through the trees, but would not be immediately next to the Riverwalk. This Alternative A would abut the Shalom I

Apartments property as it proceeds along this portion of the south riverbank. To

accommodate all users of the walk, a ten-foot wide bituminous Shared Use Path is proposed. As the Riverwalk path continues westerly, it would be adjacent to the Shalom II Apartments where the terrain slopes gently and is well landscaped and maintained by Shalom Housing, Inc. (Photo 5). There

is a section of chain link fence along an approximate 100-foot section of this segment (Photo 6). As noted previously, in a letter to the City

of Warwick, the management of the Shalom complex has demonstrated strong support for the Riverwalk project and remarked that the Riverwalk would be a benefit to the residents.



Photo 6: Chain link fence along Shalom Property

Environmental Permitting- Alternative A

Construction of Segment 1, Alternative A is subject to receiving the required environmental permits from State and Federal agencies and necessary permanent easements would have to be obtained



from the affected property owners. Segment 1 includes impacts to the 200-foot riverbank wetland associated with the Pawtuxet River, the 50-foot perimeter wetland associated with a deciduous forested wetland that borders the south side of the Pawtuxet River, possibly the deciduous forested wetland and the floodplain. A Riverwalk in this area would most likely impact the forested wetland unless the path was constructed within upland areas or previously cleared areas, such as manicured lawns. Impacts would include filling, removal and grading necessary for the 10-foot wide pedestrian/bike path and scenic overlook. Permits necessary for this segment of the Riverwalk would include an *Insignificant Alteration Permit* if the path were constructed outside of the forested wetland area or a *Significant Alteration Permit*, which involves a public hearing, if the path were constructed within the forested wetland area.

Alternative B

The suggested start of Alternative B is the same as that for Alternative A. Alternative B will proceed closer to the River's edge as it travels westward, parallel to the river. Because the embankment closer to the river can be very wet and uneven, much of the immediate river edge can be impassable at-grade. Alternative B proposes that an elevated timber walkway be utilized in the areas that are deemed impassable due to overflow river waters. This Riverwalk route alternative could proceed along the river edge through the wetlands on an elevated timber walkway (Figure 7, page 20). This structure would consist of pairs of mechanically driven timber piles, spaced approximately 10 feet apart, with timber stringers spanning between the pile caps. The floor system would consist of a wood plank deck supported by timber stringers. A railing system constructed of timber railing



Photo 7: Timber Walkway

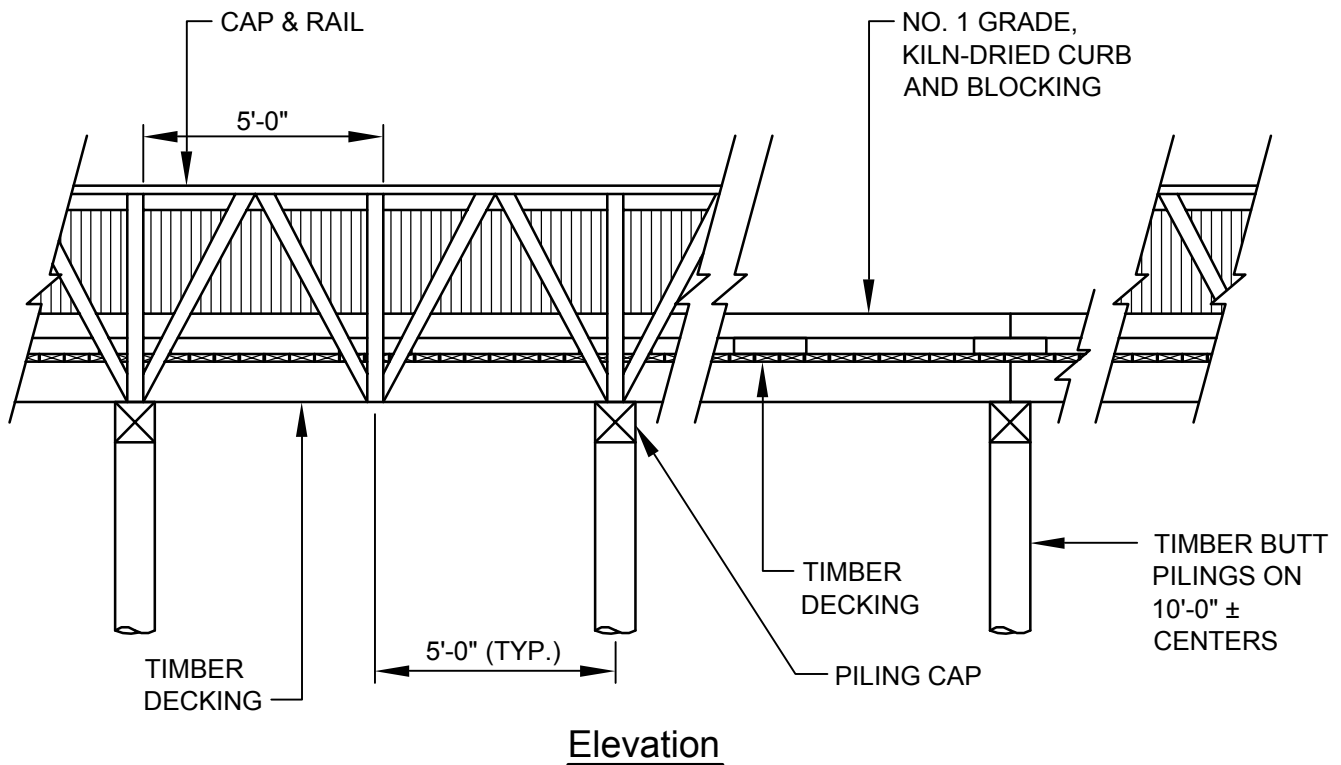
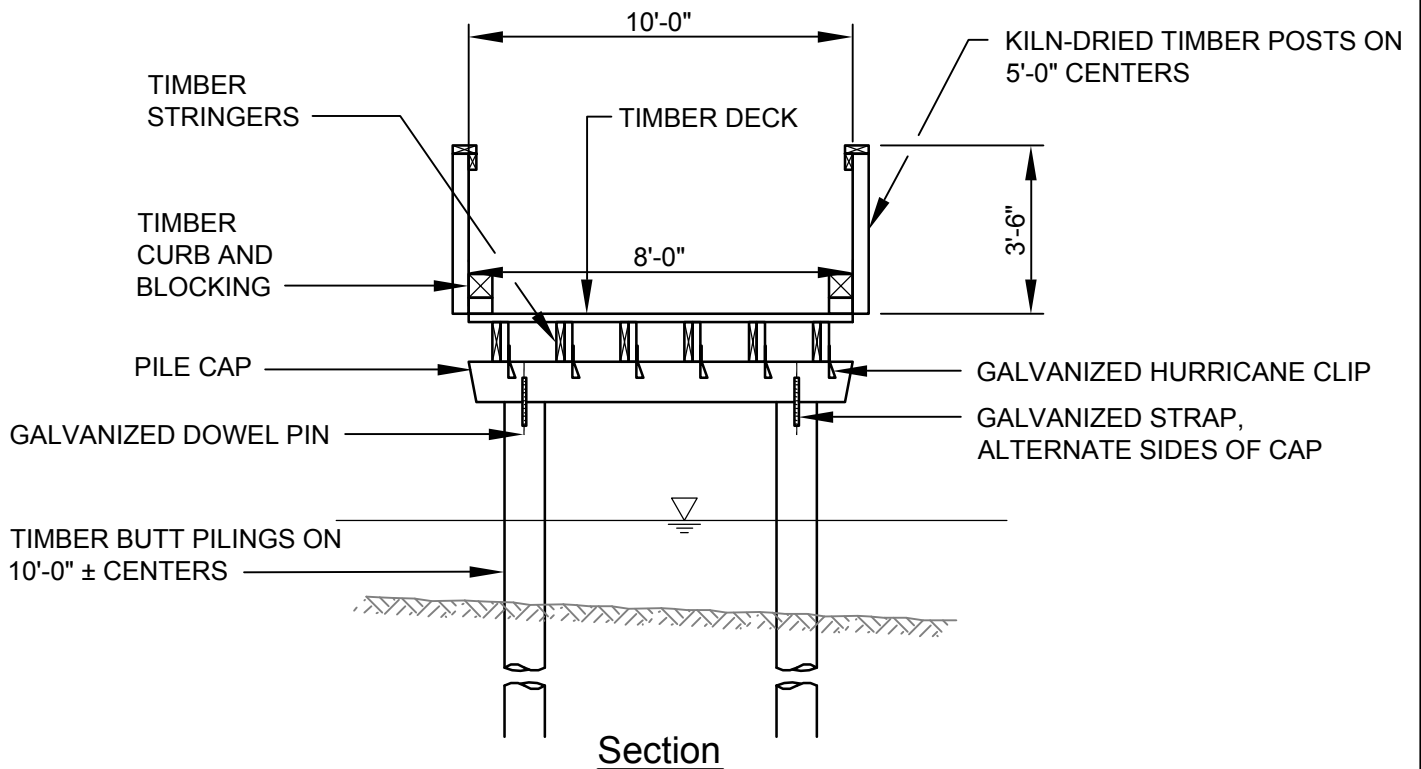
would be utilized (Photo 7). Alternative B will involve extensive permitting.

Environmental Permitting- Alternative B

Construction of this segment is subject to receiving the required environmental permits from State and Federal agencies and necessary permanent easements would have to be obtained from the affected property owners.

Segment 1, Alternative B includes impacts to the 200-foot riverbank wetland associated with the Pawtuxet River, the 50-foot perimeter wetland associated with a deciduous forested wetland that borders the south side of the Pawtuxet River, deciduous forested wetland and the floodplain. A Riverwalk in this area would most likely impact the forested wetland unless the path was constructed within upland areas or previously cleared areas.





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BICYCLE AND PEDESTRIAN STUDY AND DEVELOPMENT

PAWTUXET RIVERWALK
Warwick, Rhode Island
TIMBER WALKWAY

Impacts would include installation of pilings necessary for the construction of elevated timber walkway structure. Permits necessary for this segment of the Riverwalk would include a Significant Alteration permit for work within the forested wetland.

Visual Analysis

The suggested start point for the Riverwalk begins at a quiet senior housing project nestled between two very busy transportation routes, Greenwich Avenue and Interstate Route 95. The selection of this area as a starting point is well chosen. It's easily accessible, has adequate room for parking and is endorsed by the Shalom management. An area for vehicle parking has been identified and is suitable for development. Photo 8 is taken from the Shalom Parking lot looking up towards the area suggested for the proposed parking lot. Beyond is Interstate Route 95.



Photo 8: Shalom Parking Lot looking toward proposed parking lot.



Photo 9: Shalom I parking lot proximate to the proposed Riverwalk.

The connection between the proposed parking lot and path to the Pawtuxet River is visually appealing and an easy walk to the point where the woodland begins (Photo 9). Once past the manicured lawns of the housing complex, the route enters the woodland adjacent to the river. (Photos 10 and 11) The walkway parallels the southern edge of the river and is high and dry with a view of the river.



Photo 10: Manicured lawn en route to river.



Photo 11: Woodland adjacent to the river.



Beyond the rear property fence of Shalom Village, adequate room exists to continue the path along the river. This area is dry and sufficiently wide and flat to contain a path. Mature trees line the project corridor (Photo 12).



Photo 12: Shalom Village property fence.

Continuing on heading west along the river, the potential pathway becomes problematic. Stretches of land adjacent to the river are wet and recent rains have left the area under water and impassable. Slopes in the area leave little room for safe walking under current conditions (Photo 13).



Photo 13: Pathway adjacent to the river

Photo 14, taken from the Greenwich Village parking lot.. Straight through this view is the pedestrian bridge over the river that links to the Pontiac Mill complex. Parts of the proposed path from the parking lot to Route 5 was impassable due to standing flood waters and dense vegetation.

Recommendations

A preliminary opinion of probable construction costs for this segment Alternative A and Alternative B are \$297,000.00 and \$1,153,000.00 respectively. These preliminary opinions do not include the costs related to environmental permitting efforts or property right-of-way acquisitions. A complete list of preliminary opinion of probable construction costs for the alternatives can be found in Appendix B. It is recommended that the City pursue obtaining the necessary funding to accomplish the design and ultimate construction of the Riverwalk as described in Alternative A section.



Photo 14: View from Greenwich Village parking lot.



SEGMENT 2

Description

This approximate 5,000-foot segment was studied for the potential to construct a Riverwalk starting from the Route 5/Greenwich Avenue Bridge and ending at the Interstate Route 295 overpass (Figure 8, page 24). The Greenwich Village Apartments property abuts the proposed Riverwalk as it proceeds westward along the south bank of the Pawtuxet River (Photo 4, page 18). As noted previously, in a letter to the City of Warwick, the management of the Greenwich Village Apartments property has demonstrated strong support for the Riverwalk project and remarked that the Riverwalk would be a benefit to the residents.

Existing Conditions



*Photo 15: Greenwich Avenue
(Route 5) Bridge.*

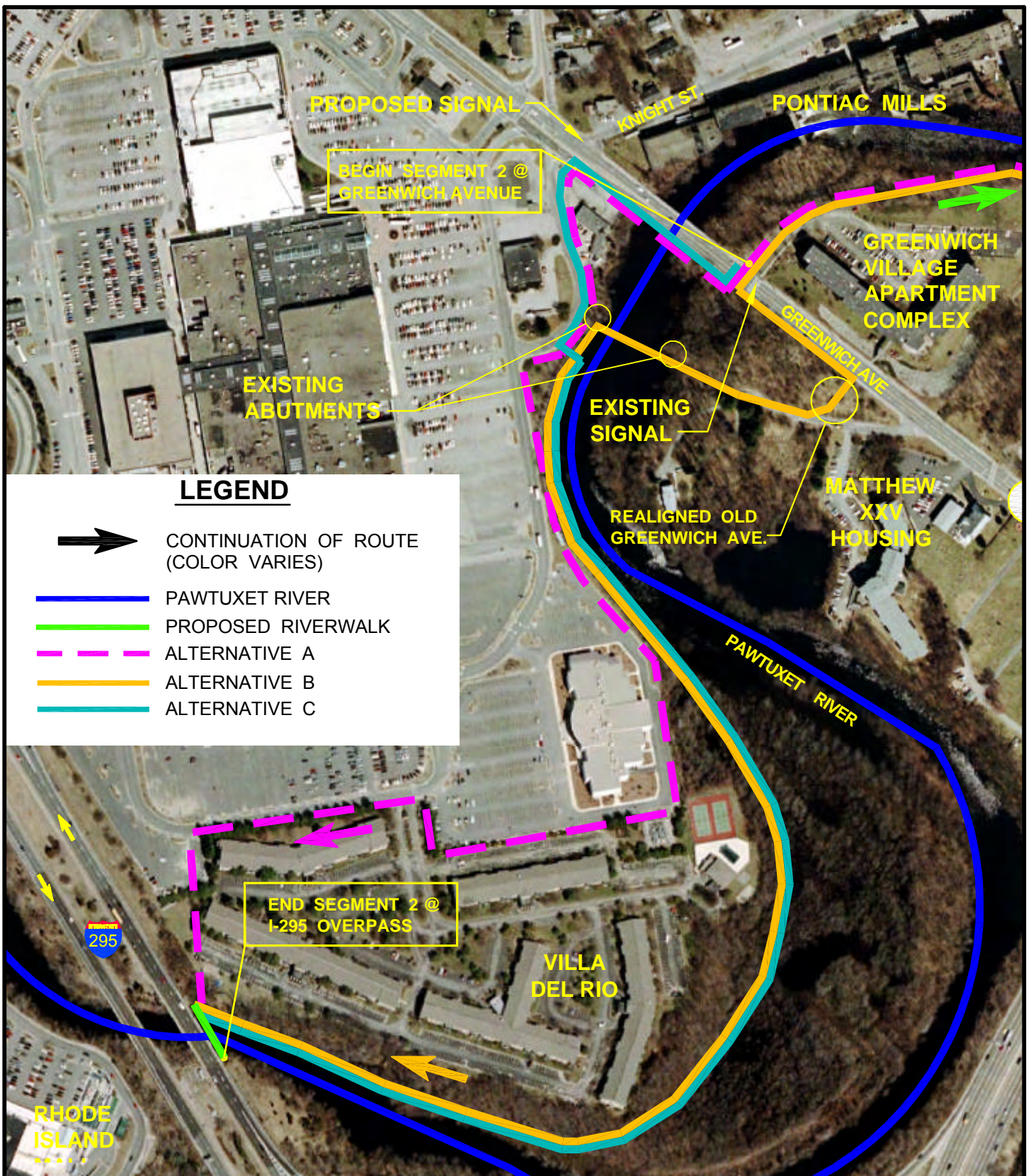
On the south side of the river, the Riverwalk would continue at-grade near the Greenwich Village Apartment complex toward the Greenwich Avenue Bridge. The Greenwich Avenue Bridge, over the Pawtuxet River, supports both the northbound and southbound traffic lanes of Greenwich Avenue. The bridge is a two-span, steel structure with concrete foundations. The clearance below the bridge at the south bank is limited; only about 11 feet of clear height exists at the abutment face (Photo 15). From the existing

drawings the high water elevation can come within six feet of the bottom of the steel stringers. An at-grade walkway below the bridge is not feasible due to the potential high water elevation near the abutments. A built structure is not feasible below this bridge either due to the limited headroom above the high water level. For these reasons, continuing the Riverwalk below the Greenwich Avenue Bridge was discounted from further study. Therefore at this bridge location, the Riverwalk is better continued up to the level of Greenwich Avenue (Photo 16).



*Photo 16: Entrance to Greenwich
Village Apartment building*

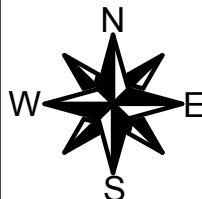




Scale: 1"= 350'±



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BICYCLE AND PEDESTRIAN STUDY AND DEVELOPMENT

PAWTUXET RIVERWALK
Warwick, Rhode Island
SEGMENT 2

Alternatives

Alternative A

The location of Alternative A is depicted on Figure 8, Segment 2 (page 24). During the research for this project, it was discovered that thirty percent (30%) construction plans for proposed highway improvements to Route 5/Greenwich Avenue from Mayfield Avenue in Cranston to the Interstate Route 95 Bridge in Warwick have been submitted to RIDOT, by BETA Group, Inc. According to these plans, in the vicinity of the proposed Riverwalk, existing signal modifications are proposed at the Greenwich Village Apartment entrance and the Shalom Drive intersections. In addition, a new signal is proposed at the intersection of Greenwich Avenue with Knight Street. The current Warwick Mall entrance to the west of the Greenwich Avenue Bridge will be closed and it will be relocated to intersect with Knight Street at the new signalized intersection. Further improvements include bridge and roadway widening and reconstruction, installation of sidewalks on both sides of Greenwich Avenue and the realignment of Old Greenwich Avenue to provide a 90-degree intersection with Greenwich Avenue. These improvements create a safe and viable pedestrian route that could be utilized to carry the Riverwalk traffic across Greenwich Avenue at the signalized intersections.



***Photo 17: On Route 5 at bridge,
facing southeast***

Subsequently, Alternative A, of this Segment, proposes that the Riverwalk proceed northwest, from the Greenwich Village Apartments entrance, along the sidewalks of Greenwich Avenue, over the Greenwich Avenue Bridge to the new signalized entrance to the Warwick Mall (Photo 17). This alternative will require the inclusion of bike lanes along Greenwich Avenue to accommodate bicyclists utilizing the Pawtuxet Riverwalk between the Greenwich Village Apartments and the Warwick Mall.

Coordination with RIDOT regarding the status of the proposed highway improvements to Route 5/Greenwich Avenue indicated that additional investigation is ongoing as to the potential installation of a roundabout on Greenwich Avenue at Knight Street rather than a traffic signal. The installation of the roundabout would eliminate the need for widening of the Greenwich Avenue bridge, impacting the feasibility of Alternative A. Continued coordination will be required with RIDOT as to the status of the proposed highway improvements, and revisions to Alternative A may be required based on the design alternative selected.



Crash data obtained from the RIDOT for the last three years was reviewed in the vicinity of the existing signal in front of street address number 300 Lambert Lind Highway (i.e. the entrance to the Greenwich Village Apartments), the intersection of Knight Street with Route 5/Greenwich Avenue, and at street address 255 Lambert Lind Highway (i.e. the entrance to the Warwick Mall) to assist in evaluating the locations for at-grade crossings. The crash data provides information regarding date, time, type and location of the crashes. Referring to the Appendix A, there were two crashes reported in the Year 2002, three in the Year 2003, and four in Year 2004 at the Greenwich Village Apartment complex. There was no common or specific type of crash that occurred. The majority of the crashes were in daylight, or well-lit areas, with dry road conditions and with minimal injuries associated with the crashes. Continuing northwest, across the bridge, to the first entrance into the Warwick Mall, a total of ten crashes were reported at this location in the three-year investigation. The majority of the crashes were in daylight, or well-lit areas, with dry road conditions and with minimal injuries associated with the crashes. Four angle related collisions, and two of each rear end, sideswipe, and broadside type collisions occurred at this location. At the Knight Street intersection fifteen crashes were reported in the Year 2002, nine in the Year 2003, and six in Year 2004, totaling thirty. The majority of the crashes were in daylight, or well-lit areas, with dry road conditions and with minimal injuries associated with the crashes. Twelve of the total crashes were attributed to angle related collisions. Only two, four and zero rear end collisions happened, at the Matthew XXV Apartments complex and the St. Paul's Church, respectively, during the three years. The proposed roadway improvements included in the construction drawings for the Route 5 RIDOT project should improve the current traffic conditions, potentially decreasing the number and severity of crashes in the area.

Continuing with the Alternative A route, the Riverwalk will remain at-grade into the Warwick Mall entrance where it will follow a path at the perimeter of the parking lot. The bituminous Shared Use Path will be ten feet wide with railing, along the riverside, and landscaping, toward the parking area, to provide a buffer between the motor vehicles and users of the Riverwalk (Figure 9 & 10, pages 28 & 29). As the Riverwalk path approaches the south end of the Warwick Mall parking lot, it will stay inland from the river's edge and will follow the edge of the mall parking lot, adjacent to the Showcase Cinemas and Villa Del Rio properties. This Alternative A likely requires the use of some current parking space land and will require coordination, permission, and agreements between the City and property owners (Photos 18 & 19).



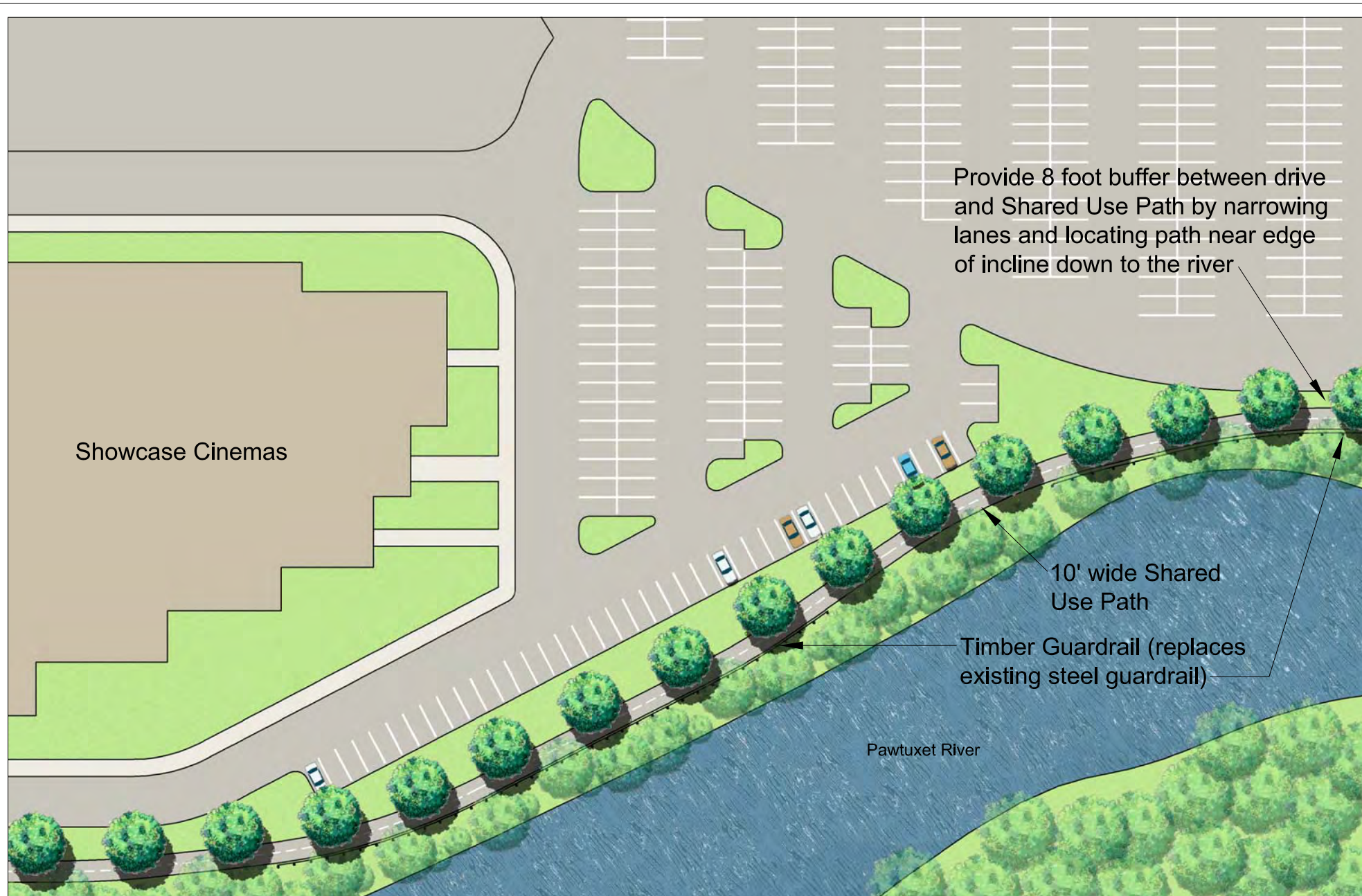


Photo 18: Warwick Mall parking lot.



Photo 19: Entrance to the Warwick Mall.





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BICYCLE AND PEDESTRIAN
 STUDY AND DEVELOPMENT
PAWTUXET RIVERWALK
 Warwick, Rhode Island
WARWICK MALL SHARED USE PATH



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BICYCLE AND PEDESTRIAN
 STUDY AND DEVELOPMENT
PAWTUXET RIVERWALK
 Warwick, Rhode Island
WARWICK MALL SHARED USE PATH

It is proposed that a bridge crossing for Alternative A be located in the southwest corner of the Villa Del Rio housing complex adjacent to the Interstate Route 295 northbound bridge (Photo 20). At this location users of the Riverwalk could cross between the north and south sides of the river to access the Warwick and Rhode Island malls on foot. The vicinity of the Villa Del Rio complex is an ideal location for such a crossing because the residents of that complex would presumably be some of the primary users of the Riverwalk. They, and others, would benefit greatly from being able to access both malls without driving a car.



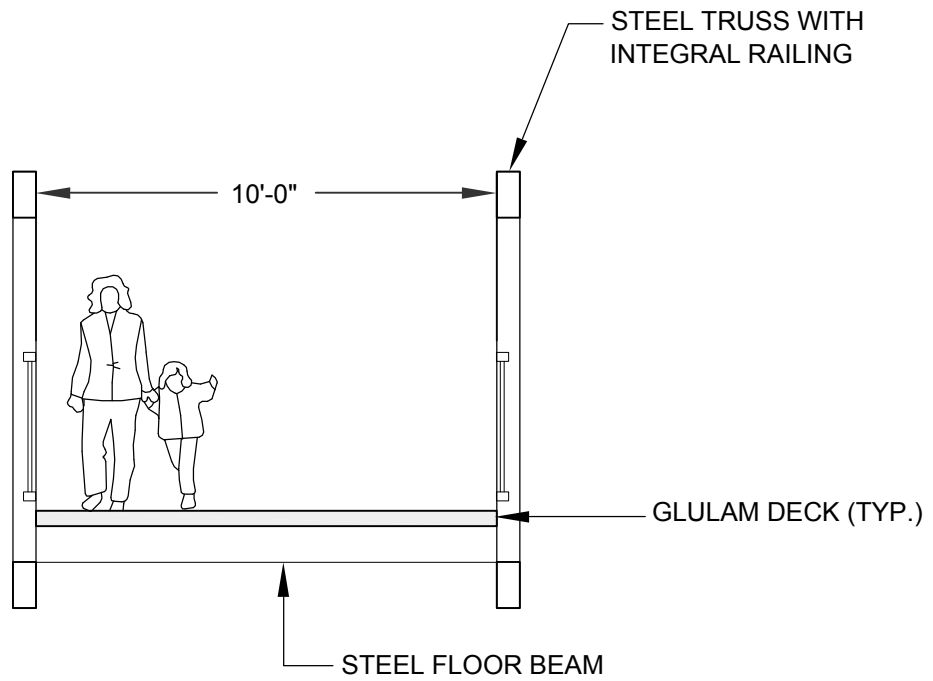
Photo 20: Location of Villa Del Rio bridge crossing

A bridge clear span of approximately 100 feet would be required to cross the river in the proposed vicinity. A minimum deck width of 10 feet would be required to allow for two-way pedestrian traffic to continue while also allowing for pedestrians to stop and view the river. Additional width may be necessary to carry emergency and maintenance vehicles. Consultation with the City of Warwick will be required during final design to determine the required clearances and bridge capacity to accommodate these vehicles. Cast-in-place reinforced concrete abutments would be required on both riverbanks. These may be surface finished with a stone veneer if desired. The following bridge types are presented to fulfill the given site conditions while also providing an aesthetically pleasing and contextual structure.

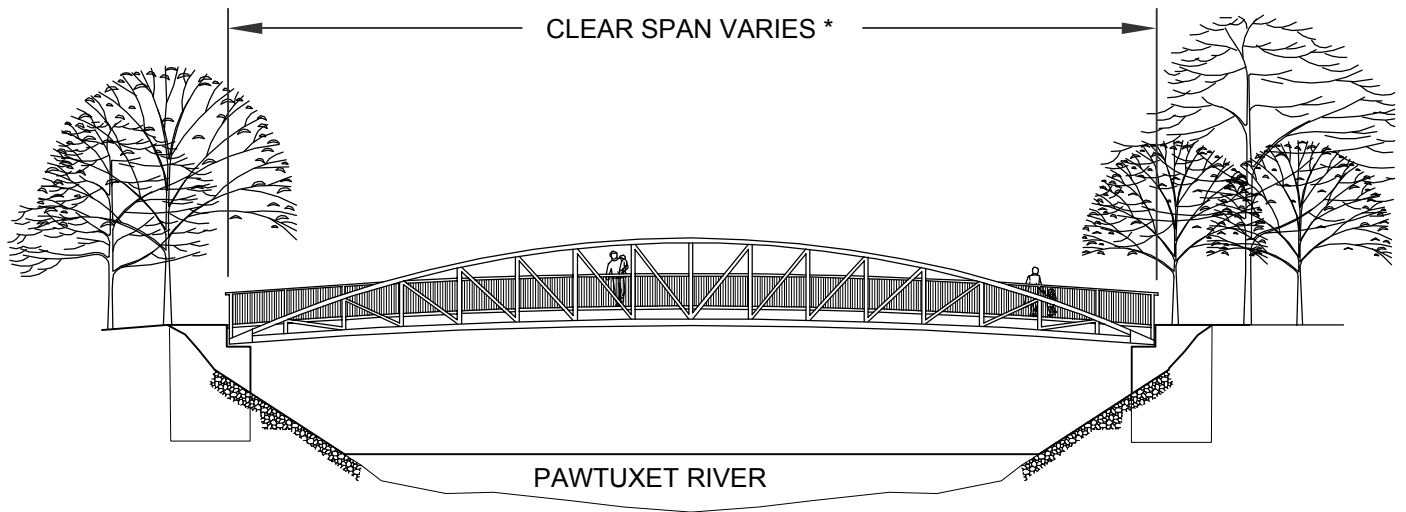
Steel Truss

Like the Old Greenwich Avenue proposed structure, this same bridge type is available in a variety of prefabricated truss styles. The two types are shown in Figures 11 and 12 (pages 31 & 32), the Steel Bow Truss and the Steel Pratt Truss bridges, respectively. The trusses provide the required structure to cross the river with a single clear span while maintaining a “light look” to the bridge. The trusses would be constructed of welded tube steel finished in a paint color of choice or a weathering steel finish to reduce maintenance. Side trusses can also act as the guardrail system. Either timber or concrete would be viable options for the bridge deck, though concrete would be preferred to reduce the possibility of vandalism of the deck. A preliminary opinion of probable construction cost for the steel bridge is \$250,000.00. This value is included in Appendix B. This preliminary opinion does not include the costs related to environmental permitting efforts or property right-of-way acquisitions.





Section



Elevation

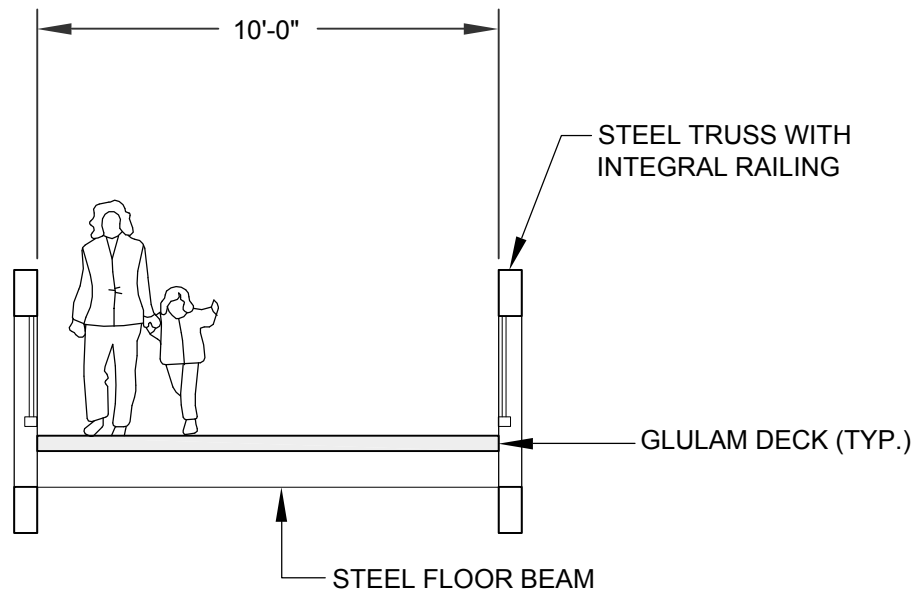
* APPROX. 170'-0"± AT OLD GREENWICH AVE. BRIDGE
100'-0"± AT VILLA DEL RIO BRIDGE



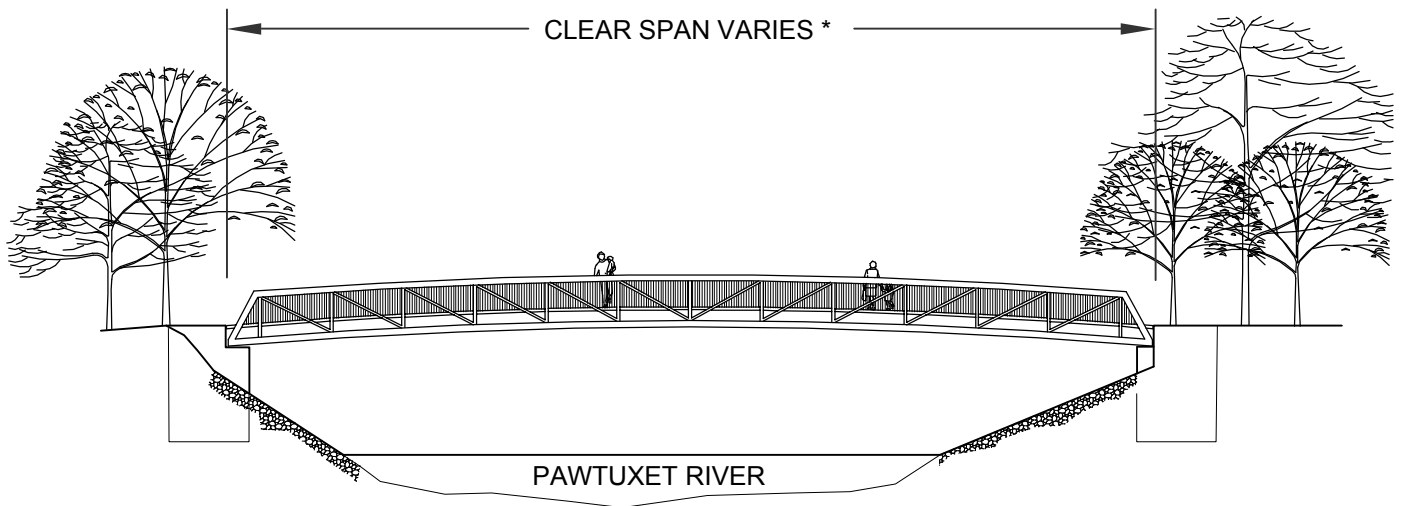
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**BICYCLE AND PEDESTRIAN
STUDY AND DEVELOPMENT**

**PAWTUXET RIVERWALK
Warwick, Rhode Island
STEEL BOW TRUSS BRIDGE**



Section



Elevation

* APPROX. 170'-0"± AT OLD GREENWICH AVE. BRIDGE
100'-0"± AT VILLA DEL RIO BRIDGE



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**BICYCLE AND PEDESTRIAN
STUDY AND DEVELOPMENT**

**PAWTUXET RIVERWALK
Warwick, Rhode Island
STEEL PRATT TRUSS BRIDGE**

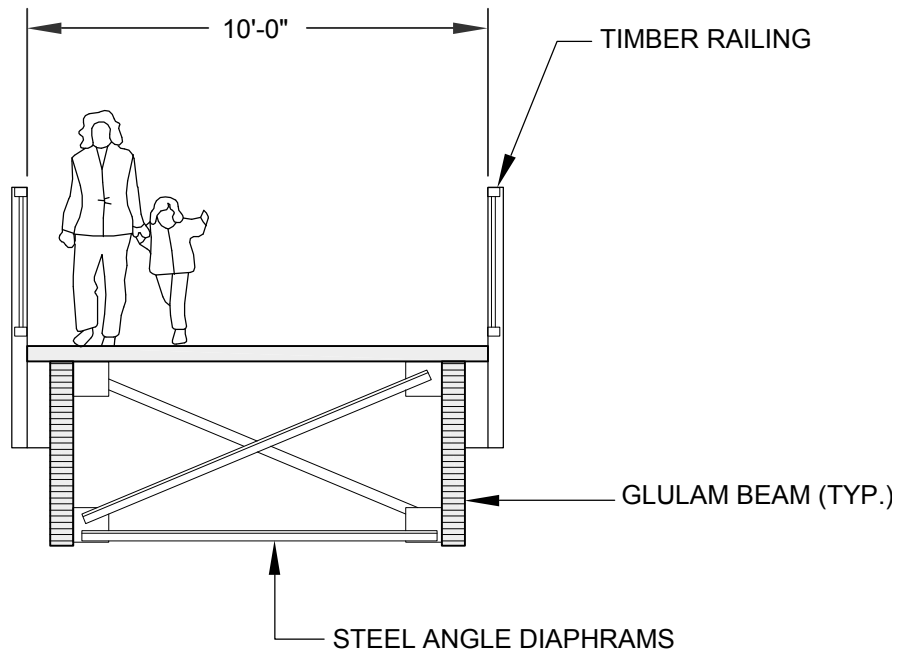
Timber Glulam

This bridge is a simply supported cambered (i.e. slightly arched) beam structure in which the primary structural elements are glue-laminated beams (glulams). Figure 13, (page 34) Glulam Timber Bridge, shows this type of bridge. The cambered beams provide additional clearance as well as visual appeal. It is estimated that beams with a depth of approximately 54 inches would be necessary for the required span. Steel angle diaphragms and cross framing provide lateral support and stability. The railing system would be of timber and a glulam deck system would span between the beams. A preliminary opinion of probable construction cost for the timber bridge is \$350,000.00. This value is included in Appendix B. This preliminary opinion does not include the costs related to environmental permitting efforts or property right-of-way acquisitions.

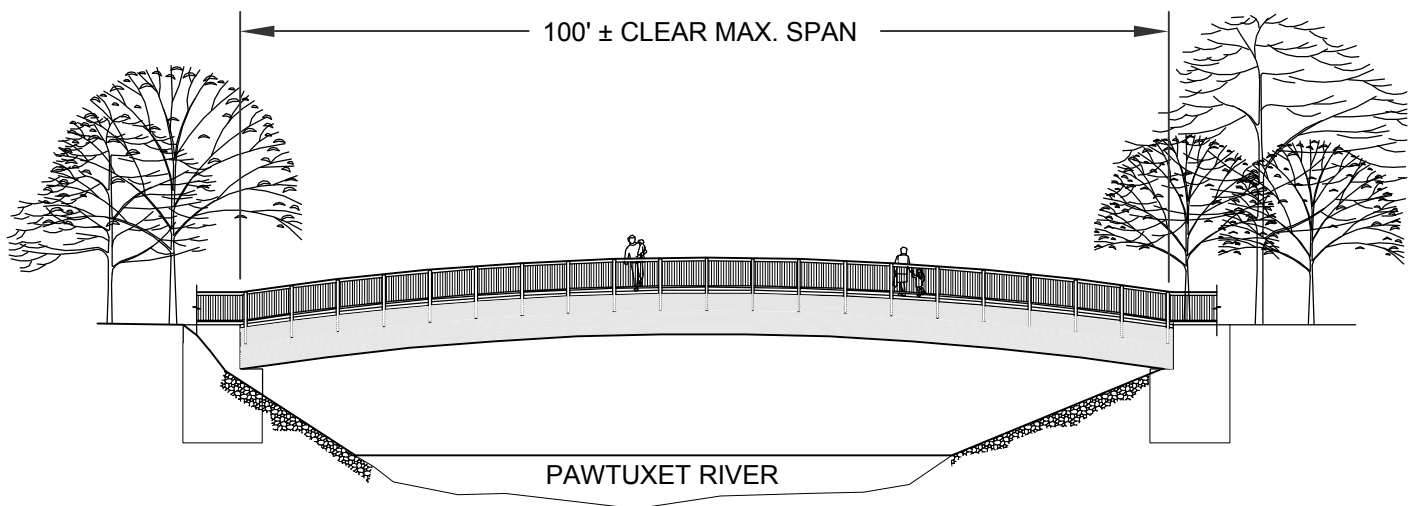
Environmental Permitting – Alternative A

Segment 2, Alternative A, includes impacts to the Pawtuxet River, 200-foot riverbank wetland associated with the Pawtuxet River, a 50-foot perimeter wetland associated with a swamp that borders the west side of the Pawtuxet River and the floodplain. Impacts would include filling, removal and grading necessary for construction of the 10-foot wide Shared Use Path, construction of one pedestrian bridge, sidewalk installation, and landscaping. Permits necessary for this segment of the Riverwalk would include a Significant Alteration permit for work within the river.





Section



Elevation



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**BICYCLE AND PEDESTRIAN
 STUDY AND DEVELOPMENT**

**PAWTUXET RIVERWALK
 Warwick, Rhode Island
 GLULAM TIMBER BRIDGE**

Alternative B

The Riverwalk route for Alternative B would cross Greenwich Avenue at the improved signal at the Greenwich Village Apartments (Figure 8, page 24). The Riverwalk would turn left and proceed southeast along Greenwich Avenue to a right turn onto the realigned Old Greenwich Avenue. This road is currently a dead end abutted by three private properties and the Matthew XXV Apartment complex property. All of the properties' lots extend to the edge of the Pawtuxet River (Figure 3, page 7). Also, the abutting property owner on the south side of the bridge is currently in the process of purchasing the right-of-way on the south side of the river from RIDOT. The owner's planned use for this property is unknown, and thus the land may not be available for public use. Should it be available, an agreement would be needed with the property owner.

This Alternative B would be a convenient way for residents of the Matthew XXV Apartment complex to access the Riverwalk. As an aside, the possibility of building a Riverwalk on the south side of the river along the back of the Matthew XXV apartment building was examined during the preparation of this report. This route was determined impracticable due to very steep embankment slopes, extremely wet areas and the inaccessibility of the river for construction purposes.

Continuing with Alternative B, the Riverwalk would follow Old Greenwich Avenue northwest toward the Pawtuxet River and a pair of existing, abandoned abutments from the Old Greenwich Avenue Bridge (Photos 21 & 22). The possibility of utilizing these abandoned abutments, to support



Photo 21: Abutment at end of Old Greenwich Avenue.



Photo 22: Abutment at the mall.

a new river crossing, was examined as a part of this second alternative. Based on visual observations, the abutments appear to be in adequate condition for reuse with a pedestrian bridge. Repairs and modifications are anticipated to include pointing and grouting and construction of new concrete beam seats and backwalls to accommodate the proposed superstructure.



A pedestrian bridge clear span of approximately 170 feet would be necessary to span the river at this location. A deck width of approximately 10 feet would be recommended to allow for two-way non-vehicular traffic to continue while also allowing for people to stop and view the river. Taking into account span length, economics, and aesthetic considerations, a prefabricated steel truss bridge is recommended. A timber bridge option would not be feasible at this location due to the length of the span. Also, coordination with the Historical Preservation and Heritage Commission should be conducted to identify any historic considerations associated with the old abutments.

A steel truss bridge would be available in a variety of prefabricated truss styles. Two styles, previously shown in Figures 11 and 12 (pages 31 & 32), are the Steel Bow Truss and Steel Pratt Truss bridges, respectively. The trusses would be constructed of welded tube steel finished in a paint color of choice or a weathering steel finish for reduced maintenance. Both timber and concrete would be viable options for the bridge deck. A preliminary opinion of probable construction cost for this steel bridge is approximately \$450,000.00.

After crossing the proposed bridge, the Riverwalk would proceed in a southwesterly direction along the edge of the Pawtuxet River. As indicated on Figure 3, Property Owners Plan, the Villa Del Rio Apartment Complex owns the property along the river in this area. It would be necessary to obtain easements to access the riverfront property for the proposed Alternative B Riverwalk path. This Riverwalk route alternative would proceed along the river edge through the wetlands on an elevated timber walkway (Figure 7, page 20). This structure would consist of pairs of mechanically driven timber piles, spaced approximately 10 feet apart, with timber stringers spanning between the pile caps. The floor system would consist of a wood plank deck supported by timber stringers. A railing system constructed of timber railing would be utilized (Photo 7, page 19). Alternative B will involve extensive permitting and property acquisition.

It is proposed that a bridge crossing for Alternative B be located in the southwest corner of the Villa Del Rio housing complex adjacent to the Interstate Route 295 northbound bridge (Photo 20, page 30). This is the same location that is proposed for the bridge in Alternative A. As stated in the discussion of Alternative A, at this location users of the Riverwalk could cross between the north and south sides of the river to access the Warwick and Rhode Island malls on foot. The vicinity of the Villa Del Rio complex is an ideal location for such a crossing because the residents of that complex would presumably be some of the primary users of the Riverwalk. The same bridge criteria



and options that were discussed in the Alternative A section, starting on page 30, would be required for the Alternative B bridge.

Environmental Permitting – Alternative B

Segment 2, Alternative B includes impacts to the Pawtuxet River, the 200-foot riverbank wetland associated with the Pawtuxet River, 50-foot perimeter wetland associated with a swamp that borders the west side of the Pawtuxet River, the swamp and floodplain. Impacts would include filling, removal and grading necessary for the construction of elevated timber walkway structure, construction of two pedestrian bridges, sidewalk installation, and landscaping. Permits necessary for this segment of the Riverwalk would include a Significant Alteration permit for work within the river and swamp.

The preliminary opinions of probable construction cost for Alternative A, using the steel bridge and the timber bridge, are \$621,000.00 and \$751,000.00, respectively. The preliminary opinions of probable construction cost for Alternative B, using the steel bridge and the timber bridge, are \$3,107,000.00 and \$3,237,000.00, respectively. An individual breakdown of the items and associated costs to construct this segment's Riverwalk Alternatives and described available options is provided in Appendix B. The preliminary opinions of probable construction cost do not include the costs related to environmental permitting efforts or property right of way.

Alternative C

The location of Alternative C is depicted on Figure 8, Segment 2 (page 24). Alternative C of this segment would be a combination of Alternatives A and B. It would begin the same as Alternative A, crossing at the improved signal at the Greenwich Village apartment and turning onto the improved Greenwich Avenue towards the Warwick Mall. Once inside the parking lot at the parking lot's edge, Alternative C would merge with the route for Alternative B and would continue along the western side of the Pawtuxet River. As indicated on Figure 3, the Villa Del Rio Apartment Complex owns the property along the river, and it would be necessary to obtain easements to access the riverfront property. This Riverwalk route alternative would proceed along the river edge through the wetlands on an elevated timber walkway (Figure 7). Although extensive permitting and property acquisition will be required, this route for the proposed Riverwalk will provide the most scenic views and desirable recreational route. In addition, the bridge that is proposed for both Alternatives A and B, located in the southwest corner of the Villa Del Rio housing complex, would also be proposed for Alternative C.



Environmental Permitting – Alternative C

Segment 2, Alternative C includes impacts to the Pawtuxet River, the 200-foot riverbank wetland associated with the Pawtuxet River, the 50-foot perimeter wetland associated with a swamp that borders the west side of the Pawtuxet River and the floodplain. Impacts would include filling, removal and grading necessary for construction of the 10-foot wide Shared Use Path and the elevated timber walkway structure, construction of two pedestrian bridges, sidewalk installation, and landscaping. Permits necessary for this segment of the Riverwalk would include a Significant Alteration permit for work within the river and swamp.

The preliminary opinions of probable construction cost for Alternative C, using the steel bridge and the timber bridge, are \$2,535,000.00 and \$2,665,000.00, respectively. An individual breakdown of the items and associated costs to construct this segment's Riverwalk Alternatives and described available options is provided in Appendix B. The preliminary opinions of probable construction cost do not include the costs related to environmental permitting efforts or property right-of-way.

Visual Analysis

The path at the end of Segment One would come to this point, the Greenwich Avenue (Route 5) Bridge, that crosses over the river. Photo 25, taken from a vantage point next to the river, shows the grade change necessary to tranverse in order to get up to Route 5. PARE has determined that extending the Riverwalk under the Pontiac Bridge is not feasible. Once up on the Greenwich Avenue Bridge, the Pontiac Mill complex is visible on the northern bank of the



Photo 25: Path at the end of Segment 1.



Photo 26: Pontiac Mill visible on the Pawtuxet River Bank.

Pawtuxet River (Photo 26). The question arises for the beginning of this second segment as to how the path can return to the river's edge as quickly as possible.



Photo 27 looks toward the signalized intersection and the Greenwich Apartments. The sidewalk along the Greenwich Avenue Bridge is heavily travelled by pedestrians going to the Warwick Mall from the apartment complex. To the right in the photo, dense woodlands are present down to the river. The grade change from the intersection of the Greenwich Apartments driveway and Route 5 to the river is significant. There are two alternatives for a route back down to the water.



Photo 27: Route 5 looking toward Greenwich Apartments and the signalized intersection.



Photo 28: Abandoned road adjacent to the Matthew XXV Apartment Complex.

One alternative studied is along

the Old Greenwich Avenue right-of-way adjacent to the Matthew XXV Apartment complex (Photo 28). This right-of-way follows a portion of an abandoned road that ends at the bank of the Pawtuxet River. Existing bridge abutments are in place on both banks of the river. This segment was not explored or photographed due to private property issues. Additionally, an abutting property

owner is currently in the process of purchasing the right-of-way on the south side of the river from RIDOT. The owner's planned use for this property is unknown, and thus the land may not be available for public use. Should it be available, an agreement would be needed with the property owner.

A second route possibility is in the opposite direction through the Warwick Mall. Photo 29 shows the driveway access that would be used to return to the river's edge beyond. The river is just beyond the trees. Under existing conditions, this potential path is less than ideal since it skirts a vast paved area and is adjacent to Route 5. A reconfiguration of the mall entrance at this point proposed in the 30% design drawings for the area will provide an improved area for pedestrians and bicyclists. The proposed striping and curbing clearly delineate the travel lanes and adjacent driveway openings. Developing



Photo 29: Secondary route through the Warwick Mall.



the Riverwalk behind these commercial buildings next to the river is not possible due to private property issues and lack of sufficient width.

Surprisingly, the river is immediately to the left of the guardrail in Photos 30, 31, and 32. Dense woods and underbrush obscure the river just a few feet beyond.



Photos 30, 31, and 32: River is immediately to the left of the guardrail.

The chain link fence in Photo 33 below is just beyond the riverbank. Notice the Showcase Cinema complex in the right of the photo. At this point the proposed path is well into the mall complex and still immediately adjacent to the river's edge although it's not visible. Just on the other side of the



Photo 33: Chain link fence at Warwick Cinema.



Photo 34: View of the river from the other side of chain link fence.

fence, is the view of the river (Photo 34). It's at this point that the river begins to distance itself from the Warwick Mall. A vast network of wetlands lies between the mall complex and the riverbank. The area was too wet with deep standing water to investigate due to recent rains.



The southeast corner of Warwick Mall and Villa Del Rio is seen to the right (Photo 35). At this point the river itself is several hundred feet to the left beyond a vast floodland.

A first alternative for the route location is behind the Warwick Cinema complex, in the parking lot to the north of Villa Del Rio. Photos 36 and 37 (overlapped) below shows the area under consideration. To the left is the cinema complex and to the right, the fencing/column line is the perimeter boundary of the apartments.



Photo 35: Southeast corner of Warwick Mall and Villa Del Rio.



Photos 36 and 37: Parking lot to the north of Villa Del Rio (Overlapped).

Photos 38 and 39 (overlapped) show the vicinity for one possible Riverwalk route extending west along the Villa Del Rio frontage to the Warwick Mall.



Photos 38 and 39: Villa Del Rio frontage to Warwick Mall (Overlapped)



Photo 40 shows the route necessary to get back toward the river on the apartment complex property. The photo shows the long expanse of fencing around the property. The fencing takes a 90 degree turn and heads toward the river. Photo 41 shows the terminus of the same fence and to the right of the photo is a chain link fence representing the State Highway boundary along Interstate Route 295. Access through this section of the Villa Del Rio property would be necessary to reach the proposed river crossing location.



Photo 40: Villa Del Rio fencing.



Photo 41: End of Villa Del Rio fencing. River is beyond grass and trees

The second alternative, for this segment, would skirt the south side of the Villa Del Rio property. This alternative would require creating a path along the back side of the Villa Del Rio recreation complex (Photo 42).

Just to the left in the photo is the woodland and wetland that lies between the apartment complex grounds and the river. The higher ground just outside the view is dry and suitable for a walkway. The area along the east and south sides of the apartment complex was not investigated due to private



Photo 42: Backside of recreation complex



Photo 43: Access point to River for pedestrian bridge.

property issues. It is assumed that land immediately adjacent to the developed edge of the apartments would be conducive to construction of the Riverwalk.

Photo 43 shows the proposed location where both Riverwalk alternatives would cross over the river.



RECOMMENDATIONS

PARE recommends that the City pursue obtaining the necessary funding to accomplish the design and ultimate construction of this segment of the Riverwalk as described in Alternative C. This alternative eliminates the need for the creation and maintenance of an additional river crossing over the Pawtuxet River, as pedestrians and bicyclists can be accommodated with the proposed widening of the Greenwich Avenue Bridge. While the overall cost and impacts of the construction of this Alternative may be higher than the other two discussed, this Alternative would provide the most desirable route through an area which is otherwise not an attractive recreational destination. This Alternative will provide Riverwalk users with a path close to the banks of the Pawtuxet River, allowing the beauty and character of the Pawtuxet River to be showcased and admired.

Continued coordination will be required with RIDOT as to the status of the proposed improvements on Greenwich Avenue. The decision to maintain the existing width of the Bridge will impact the recommended alternative. Due to the economical distinction between the steel truss structure and the timber glulam structure it is recommended that the steel truss bridge be included as part of the design of the Riverwalk for Segment 2.



SEGMENT 3

Description

This approximate 1,800-foot segment was studied for the possibility of constructing a Riverwalk beginning at the south side of the proposed pedestrian bridge near the Rhode Island Mall and continues to the edge of the northbound travel lane of Route 2 (Bald Hill Road) (Figure 14, page 45).

Existing Conditions

On the south embankment, at the pedestrian bridge, the route will head westward and pass under the Interstate Route 295 northbound and southbound bridges (Photos 44 and 45). These two vehicular



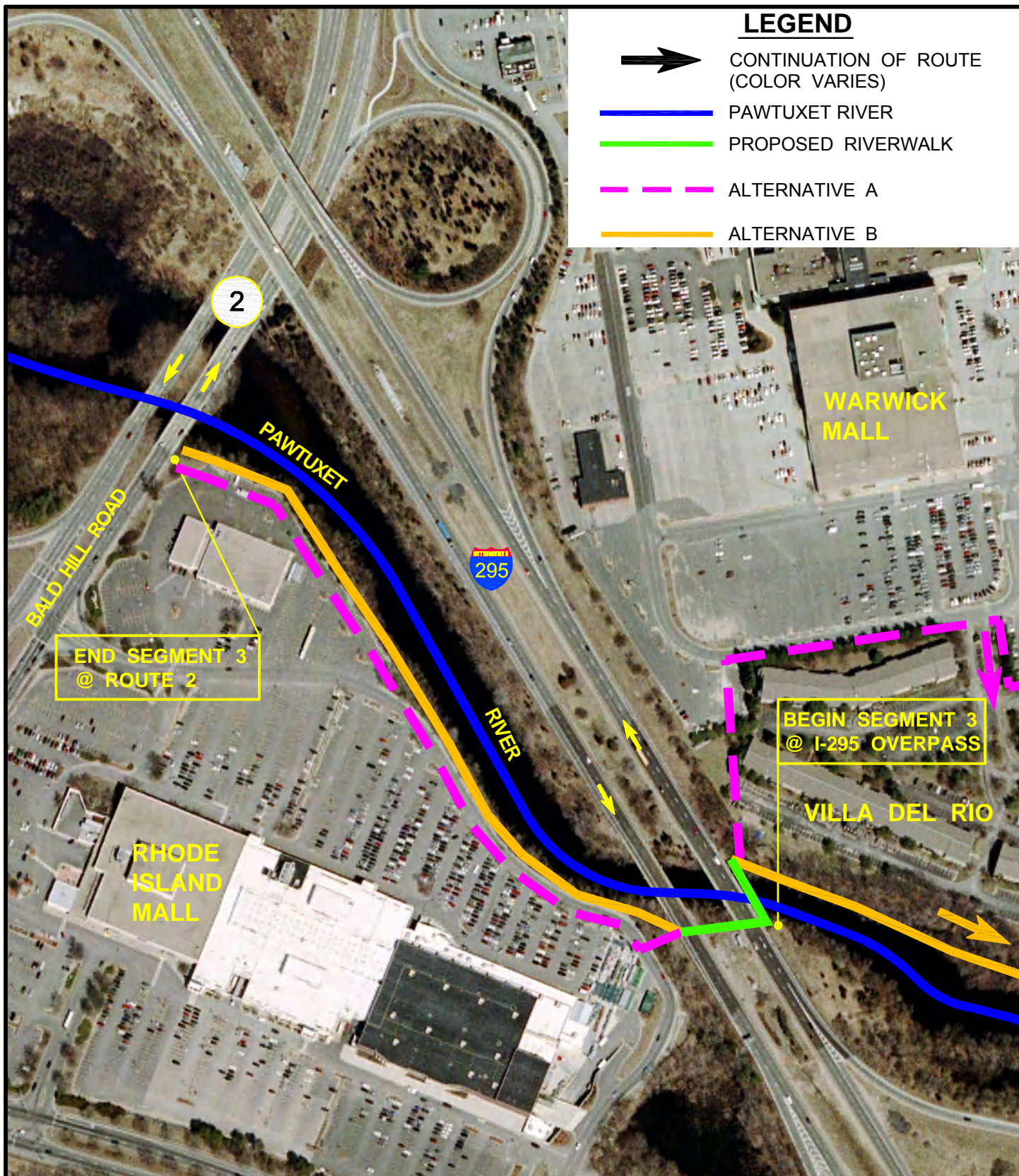
Photo 44: I-295 Northbound Bridge looking east.



Photo 45: I-295 Southbound Bridge looking west.

bridges are very similar. Both have three spans, pile supported concrete foundations, and precast concrete beams for the stringers. Although the headroom below the bridges is somewhat limited there appears to be the opportunity of stabilizing these embankments with riprap and cutting a walkway into the slope. The original contract design drawings show that the river embankments were once covered with riprap. At this point most of the riprap shown on the original drawings has either been silted in or eroded away. Therefore, the embankment adjacent to the abutment will require grading and stabilization. The existing embankment would be manipulated to a manageable grade and riprap stone laid along the resulting slope (Figure 15, page 46). The stone riprap would act to resist the effects of the river flow against the bank. There are environmental permitting issues that will have to be addressed regarding the riprap impacts to the waterway and changing the embankment slope adjacent to the waterway.

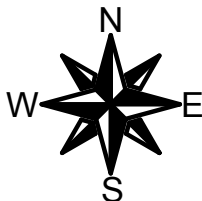




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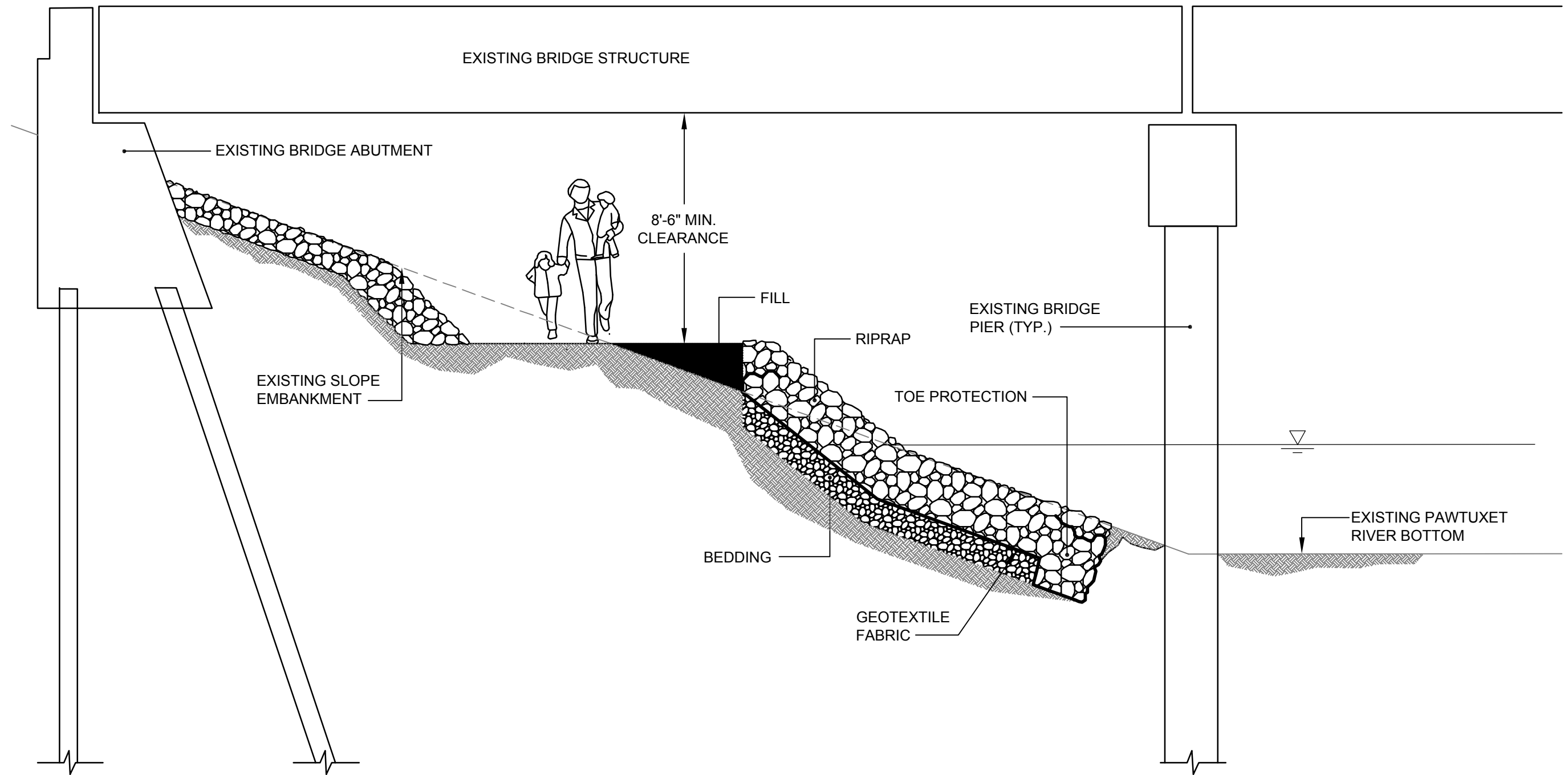


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BICYCLE AND PEDESTRIAN STUDY AND DEVELOPMENT

PAWTUXET RIVERWALK
Warwick, Rhode Island
SEGMENT 3



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BICYCLE AND PEDESTRIAN
STUDY AND DEVELOPMENT
PAWTUXET RIVERWALK
Warwick, Rhode Island
RIPRAP EMBANKMENT STABILIZATION

Alternatives

Alternative A

Alternative A for Segment 3 would proceed from the bridge along the edge of the Rhode Island Mall parking lot (Figure 14, page 45). The south riverbank in this area is quite steep and the available land width adjacent to the parking lot is limited. This option includes obtaining agreements with the Rhode Island Mall owners to utilize some portion of the existing parking lot for the walkway route (Photo 46). An attractive and appealing ten-foot wide bituminous Shared Use Path that features landscaped buffer is proposed along the edge of the parking lot, similar to that discussed at the Warwick Mall in Segment 2 (Figures 9 & 10, pages 28 & 28). This alternative would primarily encroach on the parking lot and ring road space.



Photo 46: Along edge of RI Mall parking lot.

Environmental Permitting – Alternative A

Segment 3, Alternative A includes impacts to the Pawtuxet River, 200-foot riverbank wetland associated with the Pawtuxet River, and 50-foot perimeter wetland associated with possible deciduous wetland areas bordering the west side of the Pawtuxet River. Impacts would include filling, removal and grading necessary for construction of the 10-foot wide Shared Use Path, a pedestrian bridge, embankment stabilization, a scenic overlook and landscaping. Permits necessary for this segment of the Riverwalk would include a Significant Alteration permit for work within the river.

A preliminary opinion of probable construction cost for Alternative A is \$239,000.00. An individual breakdown of the items and associated preliminary opinion of probable construction costs for each is provided in Appendix B. This preliminary opinion does not include the costs related to environmental permitting efforts or property right of way.

Alternative B

Alternative B for Segment 3 is a ten-foot wide bituminous Shared Use Path, proposed close to the southern embankments of the Pawtuxet River (Figure 14, page 45). There are several sections of the



proposed path from river's edge to the parking lot between the Interstate Route 295 bridge and Route 2 that are marginal in width, steeply sloped in nature with areas of dense brush and vegetation scattered (Photo 47). There are also spots along the river in this area that would be ideal overlook locations (Figures 16 & 17, pages 49 & 50). Along most of this length of the Riverwalk project there are areas of the embankment that will require some method of erosion control for stabilization. Two methods were examined and presented in this report for consideration.



Photo 47: Pawtuxet River embankments in area of RI Mall.

Pile/Timber Plank Bulkhead

Bulkhead embankment stabilization (Figure 18, page 51) would consist of a rigid retaining structure that would provide support and protection to the river embankment. This method would require significant embankment alterations.

Geotextile Fabric System

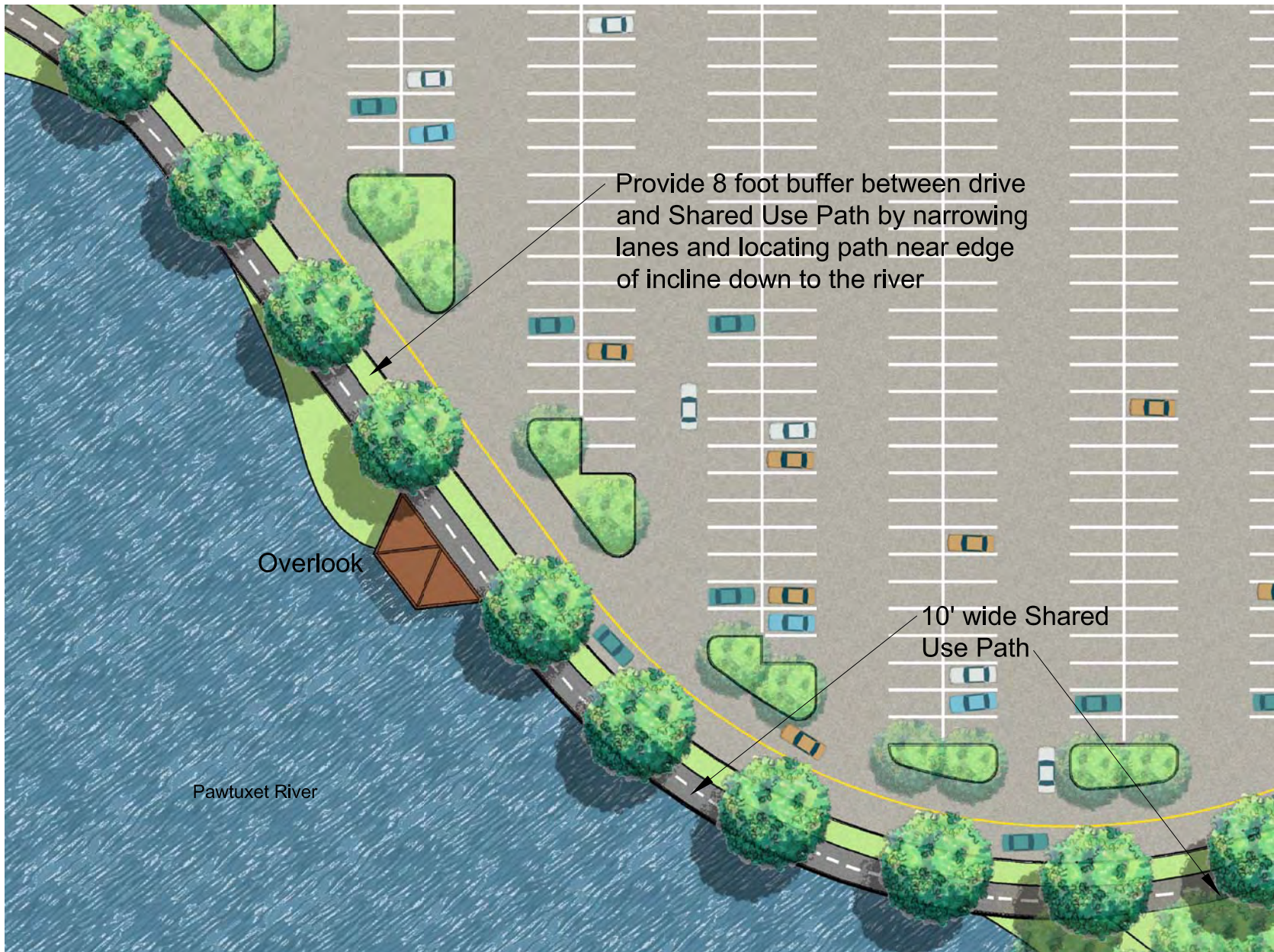
A Geotextile Fabric Embankment Stabilization alternative would consist of adjusting the existing embankment to a manageable 2:1 slope and then securing the geotextile fabric system along the resulting embankment (Figure 19, page 52). This system would provide erosion protection to the river embankment while also allowing vegetation to grow.

Alternative B will require environmental permitting and property acquisition regardless of which method of stabilization is preferred.

Environmental Permitting – Alternative B

Segment 3, Alternative B includes impacts to the Pawtuxet River, 200-foot riverbank wetland associated with the Pawtuxet River, and 50-foot perimeter wetland associated with possible deciduous wetlands bordering the west side of the Pawtuxet River. Impacts would include filling, removal and grading necessary for construction of the 10-foot wide Shared Use Path, construction of a pedestrian bridge, embankment stabilization, and landscaping. Permits necessary for this segment of the Riverwalk would include a Significant Alteration permit for work within the river.





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BICYCLE AND PEDESTRIAN
 STUDY AND DEVELOPMENT
PAWTUXET RIVERWALK
 Warwick, Rhode Island
RHODE ISLAND MALL SHARED USE PATH

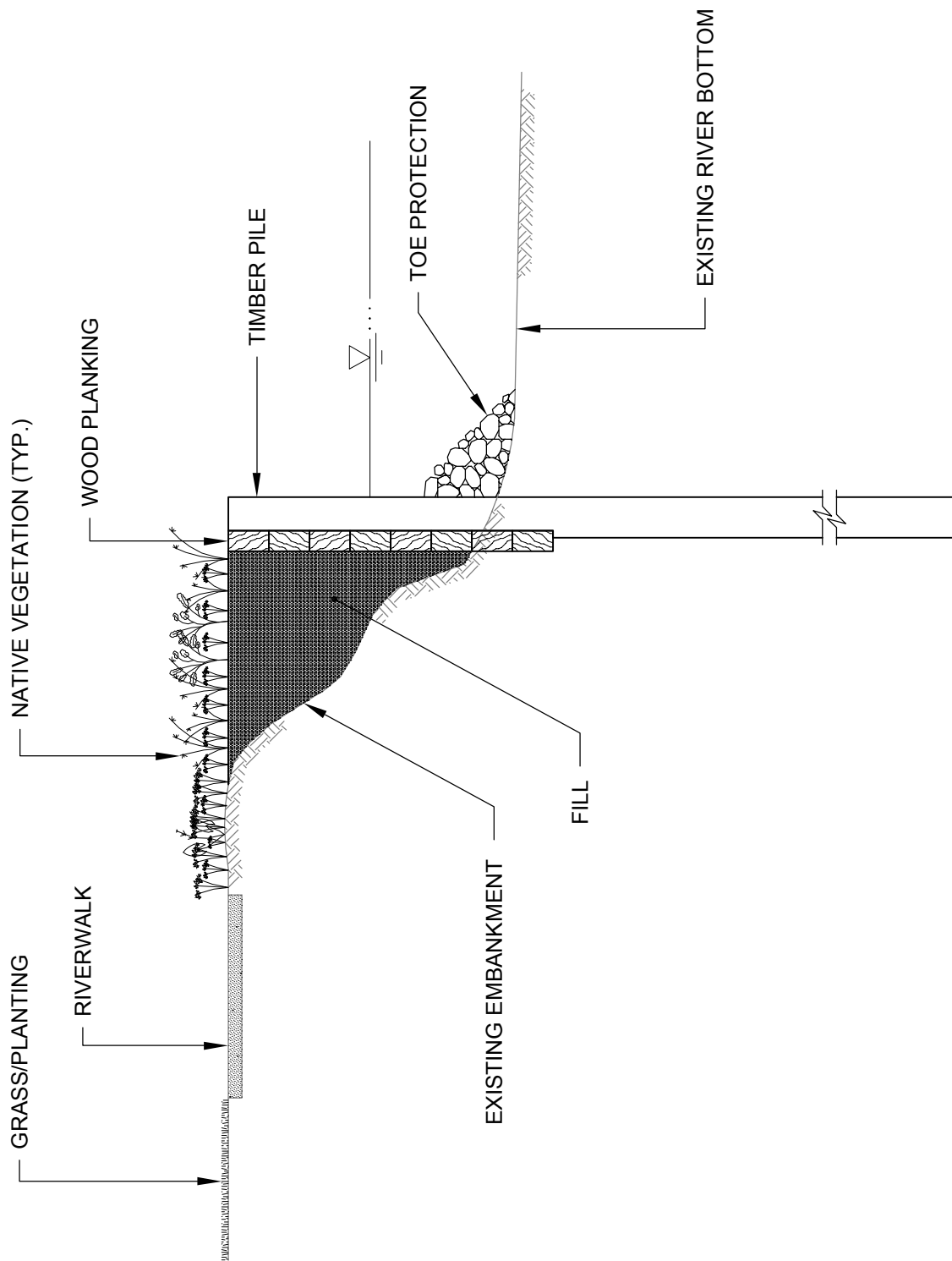


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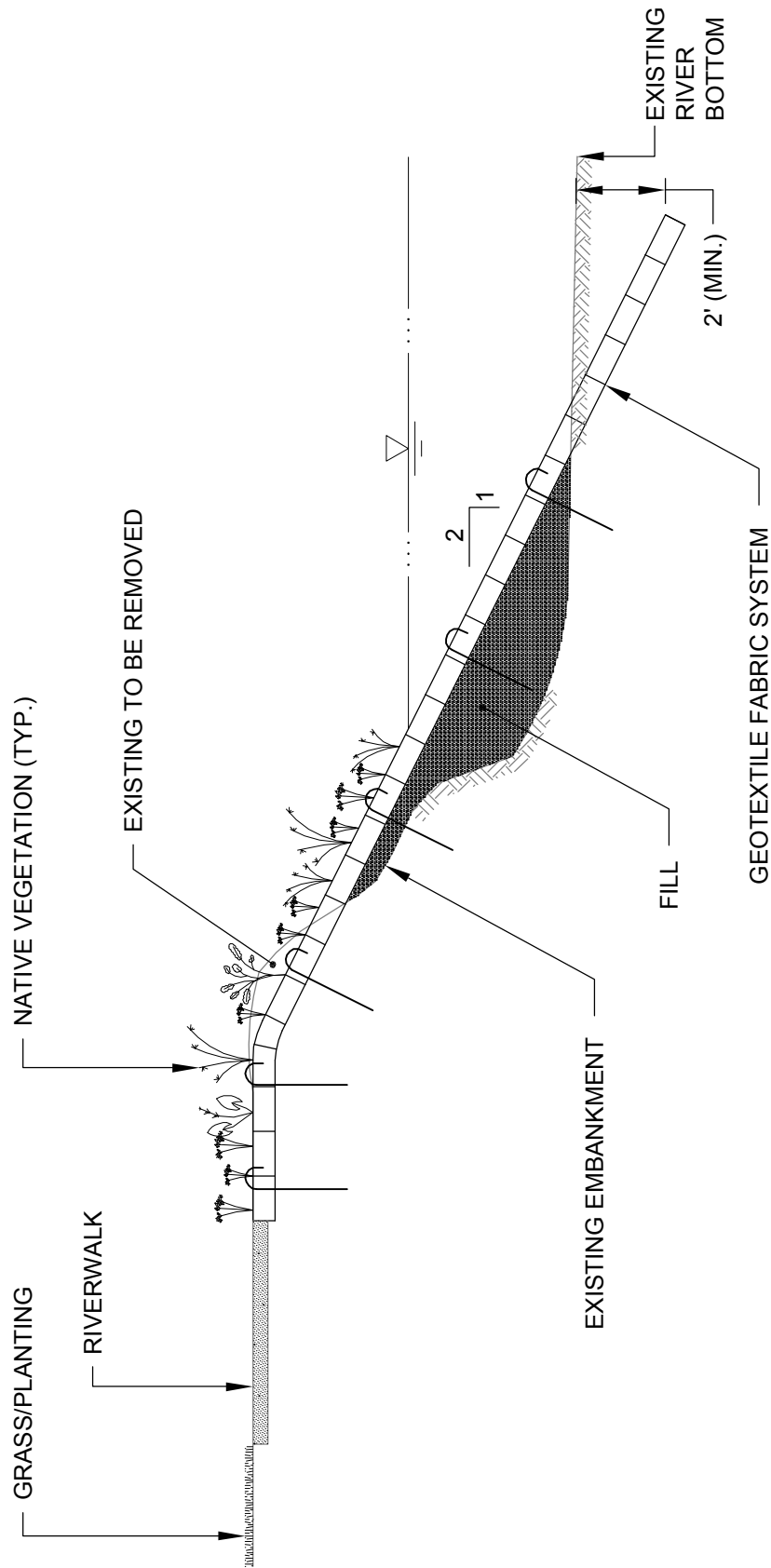
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RHODE ISLAND MALL SHARED USE PATH



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BICYCLE AND PEDESTRIAN STUDY AND DEVELOPMENT

PAWTUXET RIVERWALK
 Warwick, Rhode Island
 BULKHEAD EMBANKMENT STABILIZATION



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BICYCLE AND PEDESTRIAN STUDY AND DEVELOPMENT

PAWTUXET RIVERWALK
 Warwick, Rhode Island
 GEOTEXTILE FABRIC EMBANKMENT STABILIZATION

A preliminary opinion of probable construction cost for Alternative B utilizing the bulkhead or the slope stabilization are \$540,000.00 and \$481,000.00. An individual breakdown of the items and associated preliminary opinion of probable construction costs for each is provided in Appendix B. This preliminary opinion does not include the costs related to environmental permitting efforts or property right of way.

Visual Analysis

Once under the Interstate Route 295 bridge, the area adjacent to the river is narrow and steep, making it difficult for a pathway immediately adjacent to the river. This leaves the area for



Photo 48: Rhode Island Mall access road



Photo 49: Road Island Mall access road and parking lot

consideration at the elevation of the back parking lot for the Rhode Island Mall. The path would emerge from the underpass in the vicinity of Photo 48. To the right is the river, to the left parking and service for Walmart.

The edge of road to the right of the Photos 49, 50 and 51, follows the course of the river, gently curving the entire length of the mall property.



Photo 50: Edge of Rhode Island Mall parking lot



Photo 51: Edge of Rhode Island Mall parking lot



Photo 52 depicts just how close the river is to the parking lot. It goes unnoticed because of the heavy underbrush and woodland edge. At this point the parking lot jogs out in keeping with the riverbank and continues a distance to the northwest corner of the property and Route 2. (Photo 53 and 54)



Photo 52: View of river from grassy border along Rhode Island Mall parking lot



Photo 53: Grassy border along Rhode Island Mall parking lot

Recommendations

On account of the extensive environmental concerns, impacts and the overall costs, PARE recommends that the City pursue obtaining the necessary funding to accomplish the design and ultimate construction of this segment of the Riverwalk as described in Alternative A.



Photo 54: Western end of Rhode Island Mall parking lot



SEGMENT 4

Description

This approximate 2,000-foot segment was studied for the construction of a Riverwalk beginning at the northbound travel lane of Route 2 (Bald Hill Road) and ending at the junction with the existing Washington Secondary Bike Path (Figure 20, page 56). This Segment would be the final segment in the proposed Riverwalk.

Existing Conditions

At the west edge of the Rhode Island Mall parking lot, the Riverwalk route encounters the Route 2 northbound bridge. This bridge is similar to the Interstate Route 295 bridges (Photo 55). It is feasible that the slope could be stabilized with riprap under the east bridge and a walkway cut into the embankment. The



Photo 56: Route 2 Southbound Bridge.

Route 2 southbound bridge creates a bit of an obstacle, however, for passing beneath the bridges. This bridge is a concrete arch with no passable embankment, on the main shores, adjacent to the bridge (Photo 56).

Therefore foot traffic at-grade below the bridge would not be possible.

Nor is a structure built below the bridge feasible since it would need to exist in the center of the archway to provide enough headroom for passage. The high water elevation would be an issue. In order to establish a walkway elevation that would be above the high water elevation, the resulting headroom clearance would not be adequate for pedestrian or bicyclist passage. Due to these constraints this alternative route was discounted from further study. Subsequently, the options of either bridging over or tunneling under Route 2 have been explored in the Alternatives section (Photo 57).



Photo 55: Route 2 Northbound Bridge.



Photo 57: Route 2.

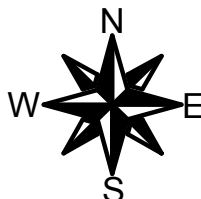




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BICYCLE AND PEDESTRIAN STUDY AND DEVELOPMENT

PAWTUXET RIVERWALK
Warwick, Rhode Island
SEGMENT 4

Alternatives

The following alternatives for getting the Riverwalk path across Route 2 were investigated.

Overpass Bridge

The overpass bridge would be a prefabricated steel truss style (Figure 21, page 58). A variety of truss styles would be available, just as with the preceding steel bridges described in this report. The trusses would be constructed of welded tube steel finished in a paint color of choice or a weathering steel finish to reduce maintenance. The clear span of the bridge would be approximately 140 feet and the clearance below the bridge would conform to RIDOT requirements. The abutments of the bridge could be constructed of either concrete or steel. A system of ADA compliant ramps, as well as stairs, would be adjacent to the abutment structures. The preliminary opinion of probable construction cost for this bridge type option is \$2,000,000.00. This value can be found in Appendix B. This preliminary opinion does not include the costs related to environmental permitting efforts or property right-of-way acquisitions.

Underpass Tunnel

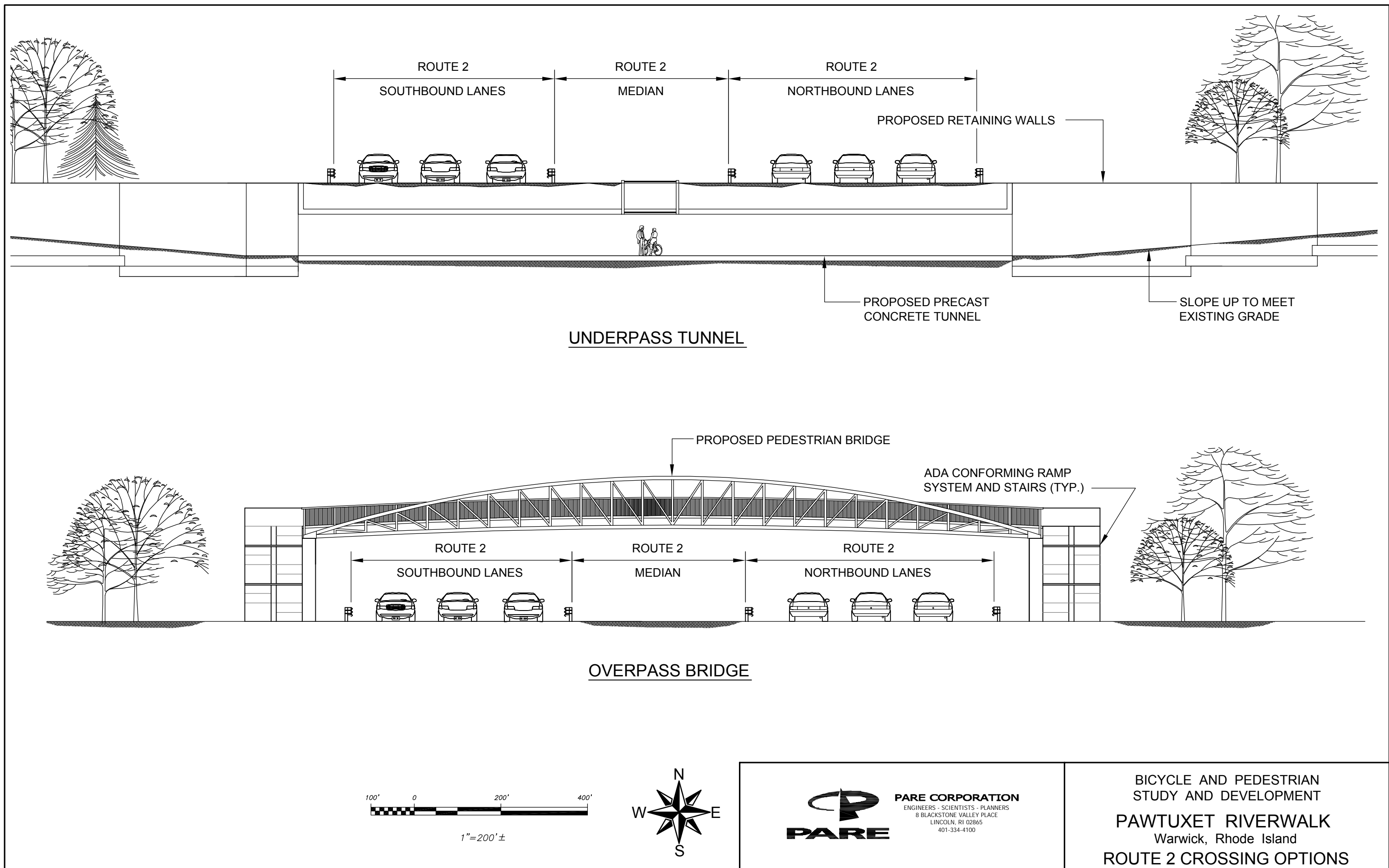
The underpass tunnel would be a 140-foot long precast concrete tunnel that would extend the full width of the Route 2 roadway below grade (Figure 21, page 58). A variety of rectangular and arched cross section shapes are available for such a tunnel. The inside tunnel width and height would be a minimum of 10 feet in order to allow passage of users in each direction as well as adequate overhead clearance for cyclists. Ample lighting fixtures and drainage structures would be incorporated into the tunnel design to allow for safe passage of users. At each end of the tunnel, cast in place retaining walls would define the edges of “at-grade”, ADA compliant ramps. The preliminary opinion of probable construction cost for this bridge type option is \$1,500,000.00. This value can be found in Appendix B. This preliminary opinion does not include the costs related to environmental permitting efforts or property right-of-way acquisitions.

After crossing Route 2 and proceeding along the embankment for a few hundred feet, the Riverwalk will encounter the Interstate Route 295 entry/exit ramp bridge. This bridge is again a similar to the Interstate Route 295 bridges and the Route 2 northbound bridge (Photo 58). It is



Photo 58: I-295 Ramps Bridge





feasible that the slope below the bridge could be stabilized with riprap and a walkway cut into the embankment as described previously (Figure 15, page 46).

After the Interstate Route 295 ramp bridge, the proposed Riverwalk would stay inland away from the river edge as an at-grade, ten-foot wide bituminous Shared Use Path. The bituminous Shared



Photo 59: Father Tirocchi Field.



Photo 60: Washington Secondary Bike Path.

Use Path would proceed until intersecting an existing abandoned railroad line spur that passes by City owned Father Tirocchi Field and Park (Photo 59) and connects to the Washington Secondary Bike Path (Photo 60). Parking at this end of the Riverwalk, as stated earlier in the report, is available at the City owned Father Tirocchi Field and Park and nearby along the Washington Secondary Bike Path Interstate Route 295 overpass on West Natick Road.

Preliminary opinions of probable construction cost for the entire Segment 4 using the overpass bridge alternative or the underpass tunnel alternative are \$2,779,000.00 and \$2,129,000.00 respectively. An individual breakdown of the items and associated preliminary opinion of probable construction costs for each is provided in Appendix B. This preliminary opinion does not include the costs related to environmental permitting efforts or property right-of-way.

Environmental Permitting

To accomplish the design and ultimate construction of this segment extensive permitting and property acquisition will be required. Segment 4 includes impacts to the Pawtuxet River, 200-foot riverbank wetland associated with the Pawtuxet River, and 50-foot perimeter wetland associated with deciduous wetlands bordering the south side of the Pawtuxet River. Impacts would include filling, removal and grading necessary for construction of the 10-foot wide Shared Use Path, construction of a pedestrian underpass tunnel, embankment stabilization, scenic overlook, and



landscaping. Permits necessary for this segment of the Riverwalk would include a Significant Alteration permit for work within the river.

Visual Analysis

This segment went largely untraversed due to accessibility issues connected with standing water conditions. The project route of the Riverwalk crosses Route 2 and transverses the off ramp from Interstate Route 295 to Bald Hill Road. It would join the Washington Secondary Bike Path just beyond the Father Tirocchi Field (Photos 61 and 62).



Photo 61: Father Tirocchi Field



Photo 62: Washington Secondary Bike Path.

Recommendations

Taking into account economical distinction between the underpass tunnel and the overpass bridge option, combined with the possible safety concerns and issues with crossing over Route 2, it is recommended the Underpass Tunnel be included as part of the design of the Riverwalk for Segment 4. It is recommended that the City pursue obtaining the necessary funding to accomplish the design and ultimate construction of the Riverwalk as described in this Segment 4 section.



CONCLUSION

The project could be beneficial to residents, visitors, and recreational users. The recommended improvements, including bridges and a tunnel are costly, but the benefit may be great. This project could link residential, commercial, and recreational facilities in the City of Warwick. The following issues are critical to discuss and consider before moving forward with design.

Maintenance Considerations

The City will be the owner of the Riverwalk and therefore will be responsible for its upkeep and general safety. In order for the Riverwalk to be a positive influence on the area, the Riverwalk needs to be cared for and policed on a regular basis.

The City will incur the expense of preserving and repairing the Riverwalk. It is important that a routine maintenance program be implemented. Routine maintenance should include, but need not be limited to, weed control, tree trimming, inspection, cleaning, trash collection, repairs and replacements, and painting. For the boardwalk structures, routine maintenance should also include removing debris from the pile supports, pressure washing, and application of a protective sealer. It is estimated that a two-man crew, for one day per month, would be an annual cost of \$10,000. It is anticipated that structural repairs will not be necessary within the first ten years of construction. A specific maintenance program and schedule will have to be discussed with the City of Warwick Department of Public Works during the design phase.

Safety and vandalism along the Riverwalk is an abutter's, a patron's, and a government's concern so regular policing along the route should be provided. As the design of the Riverwalk progresses, coordination with the City of Warwick Police Department is recommended. A program for police monitoring of the Riverwalk will need to be discussed. Based on studies of similar projects already constructed, it has been found that increased pedestrian traffic, due to a well-used walkway, is also a successful crime deterrent.

Right-of-Way Impacts

It is anticipated that land acquisitions or takings will not be required for this project. Permanent easements, however, will be necessary for the construction and maintenance of the Riverwalk. Additional temporary easements will also be required for the construction of the Riverwalk.



Permanent easements will be required for all privately owned properties through which the Riverwalk route will pass. The size of the permanent easements will need to be large enough to encompass the Riverwalk and provide adequate space for the City to access, maintain and repair the Riverwalk. In locations where boardwalk structures are supported in the river, permanent easements may be required on the adjacent properties for access, maintenance, and repair of the structure. The location, size, and type of required easements will be determined during the design phase.

Future Connection

A Future Connection could be made from the Riverwalk to the TF Green State Airport at Post Road and the proposed Warwick Intermodal Station, currently being planned at the intersection of Jefferson Boulevard and Coronado Road. (Figure 22, page 64) The installation of sidewalks along the southern edge of Metro Center Boulevard, Kilvert Street, and Coronado Road between Route 5/Greenwich Ave. and Route 1/Old Post Road would provide pedestrians safe access to and from the Riverwalk. This network of pedestrian routes would link recreational and commercial destinations in the west with alternate modes of transportation in the east. This proposed sidewalk route passes by several hotels and establishments for temporary visitors to the region.

A future connection could also be made from the Pawtuxet Riverwalk to the proposed Pontiac Secondary Bike Path. This connection would be a 0.8 mile on-road route on Knight Street from Route 5 to its intersection with Pontiac Avenue. This section of Knight Street is also part of a possible on-road connection from the proposed Pontiac Secondary Bike Path to the Washington Secondary Corridor Bike Path via Knight Street, Greenwich Avenue, and West Natick Road. This link is also discussed in the Pontiac Secondary Bike Path Site Assessment Report for the proposed Pontiac Secondary Bike Path.

Recommended Route

It is recommended by PARE that the City pursue the necessary funding to accomplish the design and ultimately the construction of the following Riverwalk Segment alternatives:

Segment	Alternative	Cost
1	Alternative A	\$297,000
2	Alternative C, with steel truss bridges	\$2,535,000
3	Alternative A	\$239,000
4	Underpass Tunnel	\$2,129,000
Total		\$5,200,000



Figure 23 (page 65) shows a plan of the recommended route for the Pawtuxet Riverwalk project.

Brief Description of Preferred Alternatives

Segment 1, Alternative A would be an at-grade path located to the south of the Pawtuxet River. As this segment travels westward it would abut the property of the Shalom Housing and the Greenwich Village Apartment complexes. This segment of the Riverwalk path would proceed parallel the river, but not immediately next to the River, from the new parking lot to the Greenwich Avenue Bridge.

Segment 2, Alternative C would begin by crossing Greenwich Avenue at the Greenwich Village apartment signal, then it would follow Greenwich Avenue north into the Warwick Mall parking lot. From the edge of the parking lot, Alternative C would proceed east through the existing wooded area to the western edge of the Pawtuxet River. This option would involve obtaining agreements from the owners of the Villa Del Rio to access the riverfront property for the proposed walkway route. This segment would terminate at the proposed pedestrian bridge crossing near Interstate Route 295, beyond the Villa Del Rio Apartments.

Segment 3, Alternative A would proceed from the proposed pedestrian bridge crossing near Interstate Route 295, it would pass under the Interstate Route 295 bridges and follow along the edge of the Rhode Island Mall parking lot. Alternative A would proceed west along the Rhode Island Mall's parking lot edge where the path area would feature a landscaped buffer. This option would involve obtaining agreements with the Rhode Island Mall owners to utilize some portion of the existing parking lot for the walkway route. This Segment would end at the Intersection with Route 2.

Segment 4, Underpass Tunnel Alternative would begin at the intersection with Route 2. The underpass tunnel would be a precast concrete tunnel that would extend the full width of the Route 2 roadway below grade. At each end of the tunnel, cast in place retaining walls would define the edges of "at-grade", ADA compliant ramps. After passing below Route 2, the segment route would proceed, at-grade, parallel to the River and then pass under the Interstate Route 295 entry/exit ramp bridge. After the ramp bridge, the proposed Riverwalk at-grade path, would stay inland, away from the river's edge and would follow an existing abandoned railroad spur to its intersection with the Washington Secondary Bike Path, near the Father Tirotchi Field and Park.

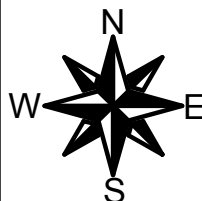




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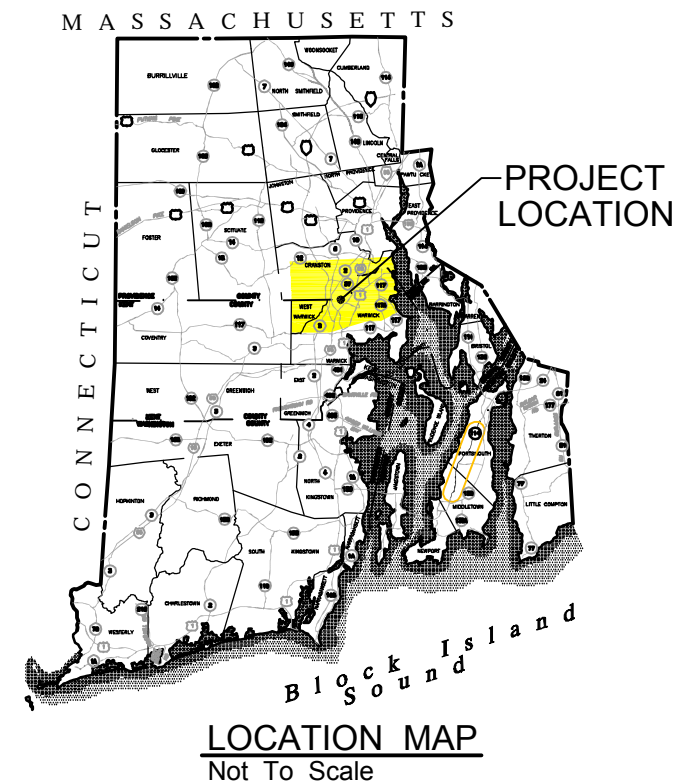


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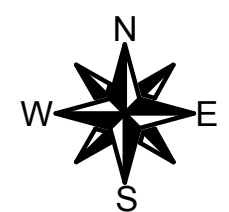
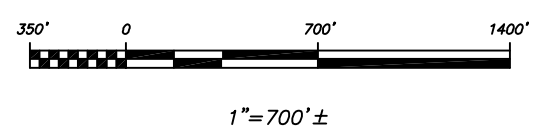
BICYCLE AND PEDESTRIAN STUDY AND DEVELOPMENT

PAWTUXET RIVERWALK
Warwick, Rhode Island
FUTURE CONNECTION



LEGEND

- APPROXIMATE CITY LINE
- EXISTING WASHINGTON SECONDARY BIKE PATH
- RIVERWALK PROPOSED ROUTE



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 STUDY AND DEVELOPMENT
PAWTUXET RIVERWALK
 Warwick, Rhode Island
PROPOSED ROUTE

APPENDIX A CRASH DATA





Route 5 (Greenwich Av) and Shalom Dr

	Report No.	Date	On Street	Intersecting Street	No. of Vehicles	Injuries	Fatalities	Weather Condition	Road Condition	Lighting	Crash Type
1	02-841-AC	03-01-02	ROUTE 5	SHALOM DR	2	1	0	NO ADVERSE	DRY	DAYLIGHT	REAR END
2	02-1250-AC	03-28-02	ROUTE 5	SHALOM DR	2	0	0	NO ADVERSE	DRY	DAYLIGHT	REAR END
3	02-2213-AC	05-29-02	SHALOM DR	ROUTE 5	2	0	0	NO ADVERSE	DRY	DAYLIGHT	ANGLE
4	02-2842-AC	07-03-02	ROUTE 5	SHALOM DR	2	0	0	NO ADVERSE	DRY	DAYLIGHT	ANGLE
5	02-4168-AC	09-21-02	ROUTE 5	SHALOM DR	3	0	0	NO ADVERSE	DRY	DARK (LIGHTED)	REAR END
6	02-5712-AC	12-18-02	ROUTE 5	SHALOM DR	2	0	0	NO ADVERSE	DRY	DAYLIGHT	BROADSIDE

	Report No.	Date	On Street	Intersecting Street	No. of Vehicles	Injuries	Fatalities	Weather Condition	Road Condition	Lighting	Crash Type
1	03-783-AC	02-14-03	ROUTE 5	SHALOM DR	2	0	0	NO ADVERSE	DRY	DUSK	REAR END
2	03-3357-AC	07-26-03	ROUTE 5	SHALOM DR	2	0	0	NO ADVERSE	DRY	DAYLIGHT	REAR END
3	03-3481-AC	08-04-03	ROUTE 5	SHALOM DR	2	0	0	NO ADVERSE	DRY	DAYLIGHT	ANGLE
4	03-5567-AC	12-05-03	ROUTE 5	SHALOM DR	3	0	0	SNOW	ICE	DARK (LIGHTED)	REAR END

	Report No.	Date	On Street	Intersecting Street	No. of Vehicles	Injuries	Fatalities	Weather Condition	Road Condition	Lighting	Crash Type
1	04-96-AC	01-06-04	ROUTE 5	SHALOM DR	4	3	0	NO ADVERSE	DRY	DAYLIGHT	REAR END
2	04-3913-AC	09-01-04	ROUTE 5	SHALOM DR	2	1	0	NO ADVERSE	DRY	DAYLIGHT	REAR END



Route 5 (Lambert Lind Hw) (Greenwich Ave) and Knight St

	Report No.	Date	On Street	Intersecting Street	No. of Vehicles	Injuries	Fatalities	Weather Condition	Road Condition	Lighting	Crash Type
1	02-486-AC	02-01-02	ROUTE 5	KNIGHT ST	3	0	0	RAIN	WET	DAYLIGHT	BROADSIDE
2	02-1172-AC	03-23-02	ROUTE 5	KNIGHT ST	2	0	0	NO ADVERSE	DRY	DARK (LIGHTED)	ANGLE
3	02-1526-AC	04-13-02	ROUTE 5	KNIGHT ST	2	4	0	NO ADVERSE	DRY	DAYLIGHT	REAR END
4	02-1580-AC	04-14-02	ROUTE 5	KNIGHT ST	1	1	0	NO ADVERSE	DRY	DARK (LIGHTED)	ANGLE
5	02-1655-AC	04-24-02	ROUTE 5	KNIGHT ST	2	0	0	NO ADVERSE	DRY	DAYLIGHT	ANGLE
6	02-2043-AC	05-18-02	ROUTE 5	KNIGHT ST	2	1	0	RAIN	WET	DARK (LIGHTED)	REAR END
7	02-3144-AC	07-22-02	KNIGHT ST	ROUTE 5	2	0	0	NO ADVERSE	DRY	DAYLIGHT	REAR END
8	02-3290-AC	08-01-02	KNIGHT ST	ROUTE 5	2	0	0	NO ADVERSE	DRY	DAYLIGHT	OTHER
9	02-3656-AC	08-23-02	ROUTE 5	KNIGHT ST	2	0	0	CLOUDY	DRY	DAYLIGHT	ANGLE
10	02-4843-AC	11-02-02	ROUTE 5	KNIGHT ST	2	0	0	NO ADVERSE	DRY	DARK (LIGHTED)	ANGLE
11	02-5131-AC	11-16-02	ROUTE 5	KNIGHT ST	2	3	0	RAIN	WET	DARK	BROADSIDE
12	02-5221-AC	11-21-02	ROUTE 5	KNIGHT ST	2	0	0	NO ADVERSE	DRY	DARK (LIGHTED)	MERGING
13	02-5242-AC	11-22-02	ROUTE 5	KNIGHT ST	2	1	0	RAIN	WET	DARK (LIGHTED)	REAR END
14	02-5506-AC	12-07-02	ROUTE 5	KNIGHT ST	2	1	0	NO ADVERSE	DRY	DAYLIGHT	SIDESWIPE (SD)
15	02-2643-AC	06-22-02	ROUTE 5	KNIGHT ST	2	0	0	NO ADVERSE	DRY	DAYLIGHT	ANGLE

	Report No.	Date	On Street	Intersecting Street	No. of Vehicles	Injuries	Fatalities	Weather Condition	Road Condition	Lighting	Crash Type
1	03-461-AC	01-28-03	ROUTE 5	KNIGHT ST	2	0	0	NO ADVERSE	DRY	DAYLIGHT	ANGLE
2	03-816-AC	02-17-03	ROUTE 5	KNIGHT ST	2	1	0	SNOW	SNOW/SLUSH	DAYLIGHT	ANGLE
3	03-1190-AC	03-11-03	ROUTE 5	KNIGHT ST	2	0	0	NO ADVERSE	DRY	DAYLIGHT	ANGLE
4	03-1689-AC	04-12-03	ROUTE 5	KNIGHT ST	2	0	0	NO ADVERSE	DRY	DAYLIGHT	SIDESWIPE (SD)
5	03-2164-AC	05-13-03	ROUTE 5	KNIGHT ST	2	1	0	NO ADVERSE	DRY	DAYLIGHT	ANGLE
6	03-2921-AC	06-28-03	ROUTE 5	KNIGHT ST	2	0	0	NO ADVERSE	DRY	DARK (LIGHTED)	REAR END
7	03-3636-AC	08-13-03	ROUTE 5	KNIGHT ST	2	0	0	NO ADVERSE	DRY	DAYLIGHT	ANGLE
8	03-3806-AC	08-23-03	ROUTE 5	KNIGHT ST	2	0	0	NO ADVERSE	DRY	DAYLIGHT	BROADSIDE
9	03-4528-AC	10-07-03	ROUTE 5	KNIGHT ST	2	0	0	NO ADVERSE	DRY	DAYLIGHT	BROADSIDE

	Report No.	Date	On Street	Intersecting Street	No. of Vehicles	Injuries	Fatalities	Weather Condition	Road Condition	Lighting	Crash Type
1	04-495-AC	01-27-04	ROUTE 5	KNIGHT ST	2	0	0	NO ADVERSE	ICE	DARK (LIGHTED)	OTHER
2	04-2457-AC	06-02-04	ROUTE 5	KNIGHT ST	2	0	0	NO ADVERSE	DRY	DAYLIGHT	ANGLE
3	04-3729-AC	08-21-04	ROUTE 5	KNIGHT ST	2	1	0	CLOUDY	DRY	DAYLIGHT	REAR END
4	04-4682-AC	10-16-04	ROUTE 5	KNIGHT ST	2	0	0	NO ADVERSE	DRY	DUSK	SIDESWIPE (SD)
5	04-6016-AC	12-26-04	ROUTE 5	KNIGHT ST	1	0	0	SNOW	SNOW/SLUSH	DARK (LIGHTED)	RAN OFF ROAD
6	05-6-AC	12-30-04	KNIGHT ST	ROUTE 5	1	0	0	NO ADVERSE	WET	DAYLIGHT	SIDESWIPE (OD)



Route 5 (Lambert Lind Hw) (Greenwich Ave.)

	Report No.	Date	On Street	Intersecting Street	No. of Vehicles	Injuries	Fatalities	Weather Condition	Road Condition	Lighting	Crash Type
1	02-2961-AC	07-10-02	ROUTE 5	FRONT OF 300	2	0	0	NO ADVERSE	DRY	DAYLIGHT	REAR END
2	02-4816-AC	10-31-02	ROUTE 5	FRONT OF 390	2	0	0	NO ADVERSE	DRY	DAYLIGHT	REAR END
3	02-5466-AC	12-05-02	ROUTE 5	FRONT OF 300	1	0	0	SNOW	SNOW/SLUSH	DAYLIGHT	RAN OFF ROAD

	Report No.	Date	On Street	Intersecting Street	No. of Vehicles	Injuries	Fatalities	Weather Condition	Road Condition	Lighting	Crash Type
1	03-1255-AC	03-15-03	ROUTE 5	FRONT OF 255	2	0	0	NO ADVERSE	DRY	DARK (LIGHTED)	ANGLE
2	03-3291-AC	07-22-03	ROUTE 5	FRONT OF 300	2	0	0	NO ADVERSE	DRY	DAYLIGHT	ANGLE
3	03-3510-AC	08-05-03	ROUTE 5	FRONT OF 389	2	2	0	NO ADVERSE	DRY	DAYLIGHT	REAR END
4	03-5308-AC	11-21-03	ROUTE 5	FRONT OF 255	1	0	0	NO ADVERSE	DRY	DARK (LIGHTED)	REAR END
5	03-5444-AC	11-28-03	ROUTE 5	FRONT OF 300	2	1	0	RAIN	WET	DARK (LIGHTED)	ANGLE
6	03-5445-AC	11-28-03	ROUTE 5	FRONT OF 255	2	0	0	NO ADVERSE	WET	DARK (LIGHTED)	REAR END
7	03-5766-AC	12-13-03	ROUTE 5	FRONT OF 300	2	0	0	NO ADVERSE	DRY	DAYLIGHT	REAR END
8	03-6016-AC	12-26-03	ROUTE 5	OLD GREENWICH AV	2	0	0	NO ADVERSE	DRY	DAYLIGHT	REAR END

	Report No.	Date	On Street	Intersecting Street	No. of Vehicles	Injuries	Fatalities	Weather Condition	Road Condition	Lighting	Crash Type
1	04-361-AC	01-20-04	Route 5	FRONT OF 359	2	0	0	NO ADVERSE	DRY	DAYLIGHT	REAR END
2	04-1832-AC	04-26-04	Route 5	FRONT OF 255	2	0	0	RAIN	WET	DAYLIGHT	SIDESWIPE (SD)
3	04-1943-AC	05-02-04	Route 5	FRONT OF 255	2	0	0	NO ADVERSE	DRY	DAYLIGHT	SIDESWIPE (SD)
4	04-2037-AC	05-07-04	Route 5	FRONT OF 255	2	0	0	NO ADVERSE	DRY	DAYLIGHT	ANGLE
5	04-2666-AC	06-15-04	Route 5	FRONT OF 389	3	0	0	NO ADVERSE	DRY	DARK (LIGHTED)	REAR END
6	04-3489-AC	08-06-04	Route 5	FRONT OF 300	2	0	0	NO ADVERSE	DRY	DAYLIGHT	ANGLE
7	04-4502-AC	10-07-04	Route 5	FRONT OF 300	2	2	0	NO ADVERSE	DRY	DAYLIGHT	BROADSIDE
8	04-4680-AC	10-16-04	Route 5	FRONT OF 255	3	0	0	NO ADVERSE	DRY	DAYLIGHT	BROADSIDE
9	04-4680-AC	10-16-04	Route 5	FRONT OF 255	3	0	0	NO ADVERSE	DRY	DAYLIGHT	BROADSIDE
10	04-4688-AC	10-17-04	Route 5	FRONT OF 255	2	0	0	NO ADVERSE	DRY	DAYLIGHT	ANGLE
11	04-4688-AC	10-17-04	Route 5	FRONT OF 255	2	0	0	NO ADVERSE	DRY	DAYLIGHT	ANGLE
12	04-6050-AC	12-28-04	Route 5	FRONT OF 300	2	0	0	NO ADVERSE	DRY	DAYLIGHT	SIDESWIPE (SD)
13	04-6050-AC	12-28-04	Route 5	FRONT OF 300	2	0	0	NO ADVERSE	DRY	DAYLIGHT	SIDESWIPE (SD)
14	05-12-AC	12-30-04	Route 5	FRONT OF 389	3	3	0	NO ADVERSE	DRY	DAYLIGHT	REAR END

APPENDIX B

OPINION OF PROBABLE CONSTRUCTION COSTS



OPINION OF PROBABLE CONSTRUCTION COSTS

A unit cost estimate for the Riverwalk materials has been provided. A breakdown of the costs per segment of the walkway will follow.

At-Grade Walkway

Bituminous Concrete Shared Use Path	\$45.00	Per Linear Foot
Cement Concrete Sidewalk	\$25.00	Per Linear Foot

Boardwalk Alternatives

Timber Walkway	\$450.00	Per Linear Foot
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Villa Del Rio Bridge Alternatives

Steel Truss	\$250,000.00	Per Each
Glulam Timber	\$350,000.00	Per Each

Slope Stabilization Alternatives

Geotextile Fabric Embankment Stabilization	\$200.00	Per Linear Foot
Bulkhead Embankment Stabilization	\$250.00	Per Linear Foot
Riprap Embankment Stabilization	\$200.00	Per Linear Foot

Old Greenwich Avenue Bridge

Steel Truss	\$450,000.00	Per Each
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Route 2 Crossing Options

Overpass Bridge	\$2,000,000.00	Per Each
Underpass Tunnel	\$1,500,000.00	Per Each



Proposed River Walk Alternatives

	<u>Length</u>	<u>Estimated Cost</u>
<u>Segment 1</u>		
Alternative A		
Shalom Property to Greenwich Avenue Bridge	2100 ft.	
Clearing & Grubbing		\$17,000
Bituminous Concrete Shared Use Path		\$90,000
Parking Lot for Riverwalk		\$38,000
Landscaping		\$33,000
Overlook/Rest Area		\$50,000
Subtotal		\$228,000
30% E & C		\$69,000
Total		\$297,000
 Alternative B		
Shalom Property to Greenwich Avenue Bridge	2100 ft.	
Clearing & Grubbing		\$22,000
Timber Walkway		\$720,000
Bituminous Concrete Shared Use Path		\$24,000
Parking Lot for Riverwalk		\$38,000
Landscaping		\$33,000
Overlook/Rest Area		\$50,000
Subtotal		\$887,000
30% E & C		\$266,000
Total		\$1,153,000



Proposed River Walk Alternatives

	<u>Length</u>	<u>Estimated Cost</u>
<u>Segment 2</u>		
Alternative A		
Greenwich Avenue Bridge to I-295 Overpass	5000 ft.	
Bituminous Concrete Shared Use Path		\$140,000
Clearing & Grubbing		\$3,000
Landscaping		\$45,000
Riprap Embankment Stabilization		\$40,000
Villa Del Rio Bridge Options:		
*Steel Truss		\$250,000
Timber Glulam		\$350,000
Steel Bridge Subtotal		\$478,000
30 % E & C		\$143,000
Steel Bridge Total		\$621,000
Or		
Timber Bridge Subtotal		\$578,000
30 % E & C		\$173,000
Timber Bridge Total		\$751,000
Alternative B		
Greenwich Avenue Bridge to I-295 Overpass	5600 ft.	
Old Greenwich Ave. Bridge		\$450,000
Clearing & Grubbing		\$15,000
Timber Walkway		\$1,575,000
Landscaping		\$60,000
Riprap Embankment Stabilization		\$40,000
Villa Del Rio Bridge Options:		
*Steel Truss		\$250,000
Timber Glulam		\$350,000
Steel Bridge Subtotal		\$2,390,000
30 % E & C		\$717,000
Steel Bridge Total		\$3,107,000
Or		
Timber Bridge Subtotal		\$2,490,000
30 % E & C		\$747,000
Timber Bridge Subtotal		\$3,237,000



Proposed River Walk Alternatives

	<u>Length</u>	<u>Estimated Cost</u>
Alternative C		
Greenwich Avenue Bridge to I-295 Overpass	4700 ft.	
Bituminous Concrete Shared Use Path		\$22,000
Clearing & Grubbing		\$13,000
Timber Walkway		\$1,575,000
Landscaping		\$50,000
Riprap Embankment Stabilization		\$40,000
Villa Del Rio Bridge Options:		
*Steel Truss		\$250,000
Timber Glulam		\$350,000
Steel Bridge Subtotal		\$1,950,000
30% E & C		\$585,000
Steel Bridge Total		\$2,535,000
Or		
Timber Bridge Subtotal		\$2,050,000
30% E & C		\$615,000
Timber Bridge Total		\$2,665,000



Proposed River Walk Alternatives

	<u>Length</u>	<u>Estimated Cost</u>
<u>Segment 3</u>		
Alternative A		
I-295 Overpass to Route 2	1800 ft.	
Bituminous Concrete Shared Use Path		\$75,000
Landscaping		\$39,000
Overlook/Rest Area		\$70,000
Subtotal		\$184,000
30% E & C		\$55,000
Total		\$239,000
Alternative B		
I-295 Overpass to Route 2	1800 ft.	
Clearing & Grubbing		\$6,000
Bituminous Concrete Shared Use Path		\$75,000
Landscaping		\$39,000
Overlook/Rest Area		\$70,000
Slope Stabilization Options:		
Bulkhead Embankment		\$225,000
Geotextile Fabric Embankment		\$180,000
Bulkhead Subtotal		\$415,000
30% E & C		\$125,000
Bulkhead Total		\$540,000
Or		
Geotextile Fabric Subtotal		\$370,000
30% E & C		\$111,000
Geotextile Fabric Total		\$481,000



Segment 4

Route 2 to Washington Secondary Bike Path

1800 ft.

Route 2 Crossing Options:

Overpass Bridge	\$2,000,000
Underpass Tunnel	\$1,500,000
Clearing & Grubbing	\$7,000
Riprap Embankment Stabilization	\$40,000
Bituminous Concrete Shared Use Path	\$81,000
Landscaping	\$10,000

Overpass Subtotal	\$2,138,000
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30 % E & C	\$641,000
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Overpass Total	\$2,779,000
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Or

Underpass Subtotal	\$1,638,000
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30 % E & C	\$491,000
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Underpass Total	\$2,129,000
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Future Connection

Pawtuxet Riverwalk to T.F. Green Airport

Cement Concrete Sidewalk	\$260,000
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30 % E & C	\$78,000
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Total	\$338,000
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APPENDIX C

VISUAL ANALYSIS PHOTO PLANS





LANDSCAPE ARCHITECT:
DIANE C.
SOULE & ASSOCIATES, ASLA
 LANDSCAPE ARCHITECTURE • GRAPHICS • DESIGN
 Smithfield, Rhode Island 401.231.0736 e-mail: DCSA@COX.NET



PARE CORPORATION
 ENGINEERS - SCIENTISTS - PLANNERS
 8 BLACKSTONE VALLEY PLACE
 LINCOLN, RI 02865
 401-334-4100

BICYCLE AND PEDESTRIAN
 STUDY AND DEVELOPMENT
PAWTUXET RIVERWALK
 Warwick, Rhode Island
VISUAL ANALYSIS Photo Plan 1



LANDSCAPE ARCHITECT:
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SOULE & ASSOCIATES, ASLA
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 Smithfield, Rhode Island 401.231.0736 e-mail: DCSA@COX.NET



PARE CORPORATION
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BICYCLE AND PEDESTRIAN
 STUDY AND DEVELOPMENT
PAWTUXET RIVERWALK
 Warwick, Rhode Island
VISUAL ANALYSIS Photo Plan 2



LANDSCAPE ARCHITECT:
DIANE C.
SOULE & ASSOCIATES, ASLA
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PARE CORPORATION
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 LINCOLN, RI 02865
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BICYCLE AND PEDESTRIAN
 STUDY AND DEVELOPMENT
PAWTUXET RIVERWALK
 Warwick, Rhode Island
VISUAL ANALYSIS Photo Plan 3



LANDSCAPE ARCHITECT:
DIANE C.
SOULE & ASSOCIATES, ASLA
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PARE CORPORATION
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 401-334-4100

BICYCLE AND PEDESTRIAN
 STUDY AND DEVELOPMENT
PAWTUXET RIVERWALK
 Warwick, Rhode Island
VISUAL ANALYSIS Photo Plan 4



LANDSCAPE ARCHITECT:
DIANE C.
SOULE & ASSOCIATES, ASLA
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PARE CORPORATION
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 8 BLACKSTONE VALLEY PLACE
 LINCOLN, RI 02865
 401-334-4100

BICYCLE AND PEDESTRIAN
 STUDY AND DEVELOPMENT
PAWTUXET RIVERWALK
 Warwick, Rhode Island
VISUAL ANALYSIS Photo Plan 5



LANDSCAPE ARCHITECT:
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SOULE & ASSOCIATES, ASLA
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PARE CORPORATION
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 8 BLACKSTONE VALLEY PLACE
 LINCOLN, RI 02865
 401-334-4100

BICYCLE AND PEDESTRIAN
 STUDY AND DEVELOPMENT
PAWTUXET RIVERWALK
 Warwick, Rhode Island
VISUAL ANALYSIS Photo Plan 6



LANDSCAPE ARCHITECT:
DIANE C.
SOULE & ASSOCIATES, ASLA
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PARE CORPORATION
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 401-334-4100

BICYCLE AND PEDESTRIAN
 STUDY AND DEVELOPMENT
PAWTUXET RIVERWALK
 Warwick, Rhode Island
VISUAL ANALYSIS Photo Plan 7



LANDSCAPE ARCHITECT:
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SOULE & ASSOCIATES, ASLA
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PARE CORPORATION
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 LINCOLN, RI 02865
 401-334-4100

BICYCLE AND PEDESTRIAN
 STUDY AND DEVELOPMENT
PAWTUXET RIVERWALK
 Warwick, Rhode Island
VISUAL ANALYSIS Photo Plan 8



LANDSCAPE ARCHITECT:
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BICYCLE AND PEDESTRIAN
 STUDY AND DEVELOPMENT
PAWTUXET RIVERWALK
 Warwick, Rhode Island
VISUAL ANALYSIS Photo Plan 9

APPENDIX D
CITY OF WARWICK
TRANSPORTATION IMPROVEMENT PROGRAM PROPORAL





State Planning Council

One Capitol Hill

Providence, RI 02908

www.planning.state.ri.us

TRANSPORTATION IMPROVEMENT PROGRAM PROJECT PROPOSAL FORM

Do not use this
form for Resurfacing
or Enhancement Projects

I. PROPOSER INFORMATION

Submitted by: (Name of organization/local government): City of Warwick--Planning DepartmentAddress: 3275 Post Rd. (Annex) Warwick, RI 02886Contact Person: Margaret Ryan, Landscape Project Coordinator Phone: 401-738-2000 ex. 629Email: Planning@warwickri.com

II. PROJECT INFORMATION

Project Title: Pawtuxet Riverwalk Community(ies): Warwick

Location: (attach an 8 1/2" x 11" location map and also indicate project limits on townwide map) _____

Limits: From: Pontiac Mills to: Washington Secondary Bike Path

Identify Project Type: check appropriate project category:

☒ Bicycle/Pedestrian ☐ Highway ☒ Study & Development (all new projects) ☒ Transit
☒ Traffic/Safety ☒ Intermodal ☒ Congestion Mitigation/Air Quality (CMAQ) ☐ Other _____

Please check the following if applicable: ☐ Regional (submitted by 2 or more municipalities) ☐ Enterprise Zone

II A. Describe proposed action: (use additional sheets if necessary)

Please See Attached

II B. Describe need for proposed action and benefits for mobility: (use additional sheets if necessary)

Please See Attached

II C. Describe environmental benefits of project e.g., air quality/water quality: (use additional sheets if necessary)

Please See Attached

III. PROJECT SUPPORT

Local Priority: (if submitted by a city or town) This proposal is priority # 4 of a total of 4 proposals submitted.

Identify additional resources to be committed to this proposal, if any:

Source: TEA-21 Pawtuxet River Path Enhanc. Grant Amount: \$50,000.00

Source: _____ Amount: _____

Has the proposer completed feasibility, planning, or design studies for the proposal? ☐ Yes ☐ No
(if Yes, list and briefly describe below):

III A. Describe support of proposed project for local and state goals and plans. Include references to local comprehensive plan(s), and State Guide Plan, and other state plans: (use additional sheets if necessary)

Please See Attached

III B. Identify relationship of project to community or economic development initiatives: (use additional sheets if necessary)

Please See Attached

III C. Provide information relevant to consideration of project proposal: (use additional sheets if necessary)

Please See Attached

IV. PROJECT PUBLIC INPUT

For proposals submitted by city or town government:

A local public hearing to consider proposal ☒ was ☐ will be held on: (date): 02/06/02

For proposals submitted by other organizations or entities:

A letter of support from city/town municipal chief executive or planning director ☐ is attached ☐ will be submitted by March 1, 2002.

8 copies of Project Proposal Forms must be returned no later than February 22, 2002 to:

R.I. Statewide Planning Program
ATTN: Katherine Trapani, Supervising Planner
One Capitol Hill Providence, RI 02908

For further information contact:
katherinet@mail.state.ri.us
or at 222-6479

PAWTUXET RIVER WALK

I. PROJECT INFORMATION

Describe proposed action:

This project proposes a safe and scenic pedestrian pathway along both sides of the Pawtuxet River, linking the historic Pontiac Village and Mill with approximately 450 units of elderly and disabled housing, Warwick and Rhode Island Malls, Route 5 and Route 2, the Community College of Rhode Island, East Natick Village and the Washington Secondary Bicycle Path. Proposed amenities would include lighting, landscaping, benches, signage and trash receptacles. Proposed pedestrian bridges would provide scenic overlooks and pedestrian connections to destinations on alternate sides of the river. Please see the attached aerial map for a visual description of the project proposal.

Describe need for proposed action and benefits for mobility:

This project would elevate pedestrian transportation in the proposed project area to a priority level and correct high priority safety problems. This River Walk would create a pedestrian network that allows movement among a variety of origins and destinations, while connecting alternate modes of transportation.

A river walk along the Pawtuxet connecting all of the above elements would provide:

- Mobility to a widely diverse pedestrian population, including low to moderate income elderly, disabled and families.
- Safe mobility to a population without vehicles.
- An alternative mode of transportation for short distance, high traffic situations.
- An improvement in alternate transportation to the Community College of Rhode Island through a safe connection to the Washington Secondary Bike Path.
- Linkage between different transportation modes by connecting a proposed pedestrian path, an existing RIPTA transit connection and the new recreational pathway.
- A Pawtuxet River Walk pedestrian pathway would provide a vital element of connection between Rhode Island's Intermodal Hub; T. F. Green Airport and the new Intermodal Rail Station and many alternate modes of transportation.

Describe environmental benefits of project e.g. air quality/ water quality:

A river walk would provide a significant reduction in the number of cold start short single occupancy vehicle trips by providing the opportunity for a safe and scenic pedestrian connection between destinations, which generate high numbers of trips. This would reduce emissions of air pollutants and greenhouse gases from mobile sources.

Because of the proximity of the River to Rtes. 2 and 5, 95 and 295, this project could identify opportunities to utilize urban forestry practices to manage and enhance right of way vegetation and to reduce stormwater runoff from roadways through greater use of vegetated buffers for infiltration. Newly planted trees would contribute to air pollution attenuation by stripping pollutants from the passing air.

II. PROJECT SUPPORT

Describe support of proposed project for local and state goals and plans. Include references to local comprehensive plan and the State Guide Plan.

The City of Warwick Comprehensive Plan states the following Goals and Objectives in the Natural Resources, Open Space and Recreation Section:

- To foster, where possible, bicycle/ pedestrian linkages and/or "green corridors" between existing open space and recreation nodes. Examples of such linkages include corridors along the Pawtuxet River between Belmont Park and Pawtuxet Village.
- To identify and seek a variety of funding sources to implement a program of open space acquisition. Unprotected open spaces to be considered for future protection specifically include the shores and waters of the Pawtuxet River in Natick and Pontiac.
- To maintain high standards of urban design and aesthetics in public open spaces.

The City of Warwick Comprehensive Plan states the following Goals and Policies in the Circulation and Transportation Section:

- Provide the City of Warwick with a balanced transportation system that meets the needs of it's citizens by developing a related network of local roads and highways, public transportation, rail service, parking, pedestrian walkways and bicycle paths.
- Work with the Rhode Island Department of Transportation, the Public Transit Authority, and adjacent communities to increase public transit options and to expand public transit service.

The State Guide Plan/ Element 611/ Ground Transportation Plan: 2001 Update states many specific goals related to transportation land use and development that this proposed project would implement.

- To elevate pedestrian transportation to the highest level
- To encourage alternatives to single occupant auto travel
- To provide alternative modes of transportation for short distance, high traffic situations
- To make the transportation system accessible to people with mobility limitations and other disabilities
- To utilize transportation programs and projects to maintain and enhance environmental quality and community livability
- To utilize transportation to support tourism
- To expand alternative means of transportation to colleges
- To provide convenient intermodal connections, example is airport to all other modes

Identify relationship of project to community or economic development initiatives:

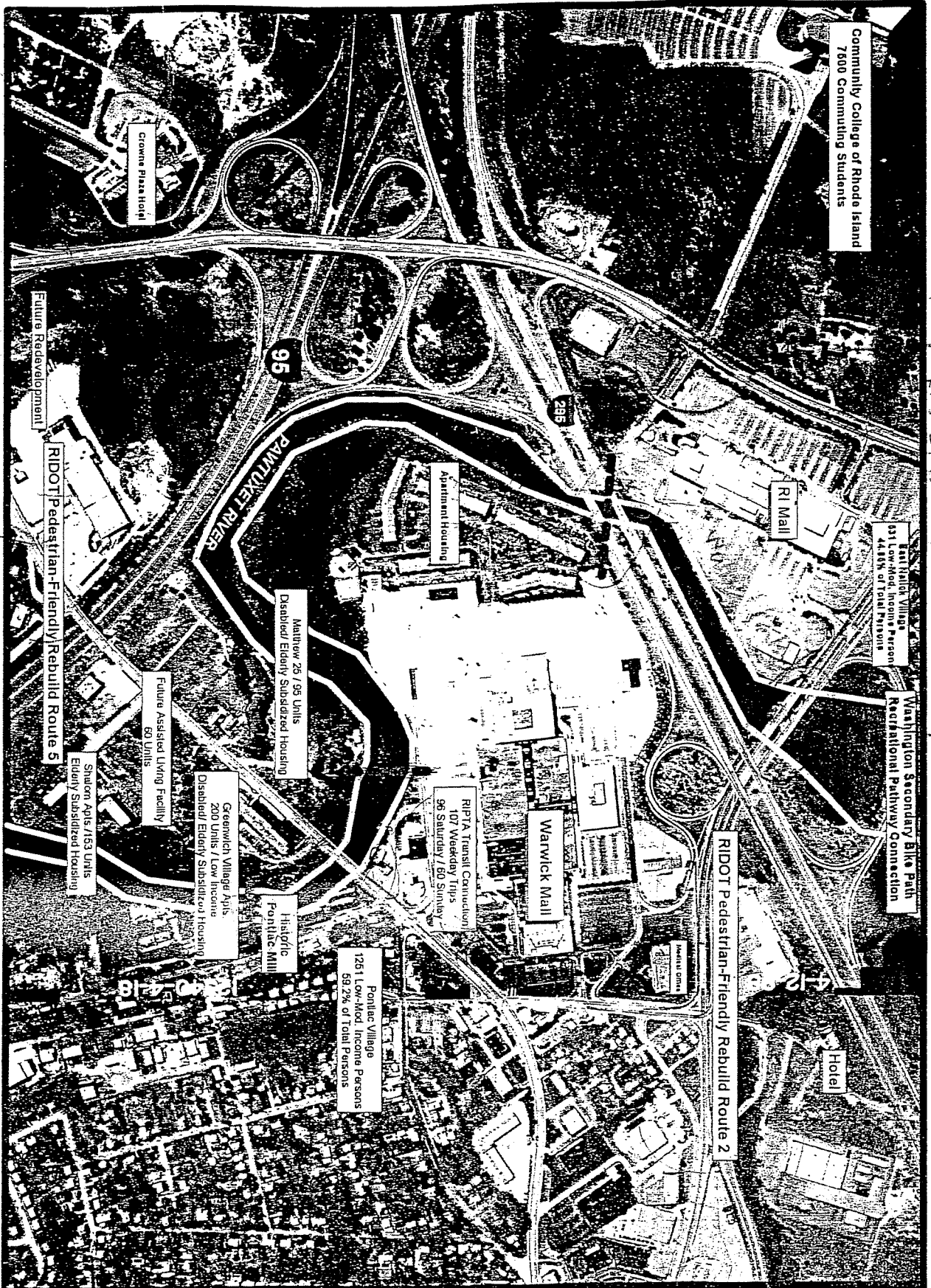
A River Walk connecting all destinations along this segment of the Pawtuxet River would strengthen this existing urban area and define its' future character. Where there is currently fragmentation and urban sprawl, a Riverwalk would create community cohesiveness and a sense of place. A River Walk and pedestrian bridges would provide access to and enhancement of this segment of the Pawtuxet River Corridor, creating opportunities for scenic vistas in Historic Districts and the surrounding neighborhoods. It would provide safe pedestrian accessibility to existing populations with no vehicles, mobility limitations and other disabilities. It would provide neighborhood improvement and economic benefit to residents of low to moderate income elderly and disabled housing and Census block-group areas, connecting employment, shopping, entertainment, educational, recreational opportunities. A River Walk would provide an additional and convenient link to transit and intermodal connections.


This proposed river walk creates a greenway alternative as a vital element linking an Intermodal Hub with several different modes of transportation and a variety of origins and destinations. Proposed project area is located approximately 2 miles west of the T.F. Green Airport and the new Intermodal Rail Station. Connecting hotels with theaters, retail and historic mill shopping and neighborhoods, alternate modes of transportation and an Intermodal Hub, an attractive riverwalk pedestrian pathway would create new opportunities for jobs and economic development, especially tourism.

Provide information relevant to the consideration of project proposal:

The Rhode Island Department of Transportation is currently constructing a pedestrian friendly rebuild on Route 2/ Bald Hill Road and designing a pedestrian friendly rebuild on Route 5/ Greenwich Avenue between I95 and Route 113. These projects include traffic improvements, sidewalks and landscaping.

A proposed pedestrian pathway along the Pawtuxet River would combine with the pedestrian friendly elements of the Route 2 and Route 5 projects, creating a neighborhood where destinations and intermodal connections are more conveniently accessible to a widely diverse population.






Seal of the City of Pawtuxet, RI

Scott Avedisian
Mayor

4033900107/001

NTS



Pawtuxet River Walk Proposal 2002

City of Warwick Planning Department

Pawtuxet River

Potential Pedestrian Crossing

To be done by 5/1/03
 @ T-B-A
 01/25/03

APPENDIX E

PROJECT SUPPORT



January 29, 2002

The Honorable Scott Avedisian
Mayor of the City of Warwick
Warwick City Hall
3275 Post Road
Warwick, RI 02886

Dear Mayor Avedisian:

I have just received a letter from Margaret Ryan, Landscape Project Coordinator, apprising us of the wonderful new project that you are planning along the Pawtuxet River.


As I looked at the map, I could envision the beauty of this River Walk and the many Warwick, Cranston residents that will be able to enjoy this walkway.

As an Agency, we could not be more supportive as we do have 154 affordable units in Warwick, Shalom I & II, and we will hopefully be constructing a 66-apartment assisted living residence on the Shalom Village property.

Can you envision the many older adults that will be able to take advantage of the beautiful scenery, the exercise that they will be able to have on a safe and beautiful walk? We truly are so appreciative of the vision of your administration.

Once again, we wholeheartedly support this project.

As always,


Susette Rabinowitz
Executive Director

cc: Margaret Ryan
Landscape Project Coordinator
City of Warwick

Shalom

SHALOM HOUSING, INC.
SHALOM II HOUSING, INC.

One Shalom Drive Warwick, Rhode Island 02886
Two Shalom Drive Warwick, Rhode Island 02886
(401) 738-4414 (401) 738-2490 Fax

January 30, 2002

Mayor Scott Avedisian
Warwick City Hall
City of Warwick
3275 Post Road
Warwick, RI 02886-7191

Dear Mayor Avedisian:

We at Shalom would like to express our strong support of the City's plans to create a Riverwalk along the Pawtuxet River.

Shalom and Shalom II Apartments abut the Pawtuxet River. Our tenants are active and involved seniors, many of whom belong to senior clubs and organizations. They are a strong part of the Warwick Community and would find great advantage to having so close a Riverwalk with the amenities you would hope to have.

Your creative plans indicate your understanding of an aging population that continues to connect with the population as a whole. And with the current plans to add an assisted living residence to the property adjacent to Shalom, an even larger community would be served.

Thank you for your innovative concept in redefining our area of the City.

Sincerely,



Bonnie A. Sekeres
Executive Director
Shalom Housing, Inc.

BAS/sml



Sponsored by Jewish Seniors Agency of Rhode Island



RECEIVED

JAN 29 2002

CITY OF WARWICK
PLANNING DEPARTMENT

January 24, 2002

Honorable Scott Avedisian
Mayor, City of Warwick
City Hall
3275 Post Road
Warwick, RI 02886

Dear Mayor:

On behalf of the development team for the Pontiac Mills, we would like to express support for the Pawtuxet River Walk proposal. The successful redevelopment of the Pontiac Mills will depend on a thorough integration with the life of the community, and the River Walk would make a considerable contribution to that end. Since our connection to the river is very strong, we would support all efforts that improve access to the river while enhancing its scenic and recreational value.

As the City of Warwick develops the design of the River Walk, please keep us informed of your progress. There are some particular conditions at the Pontiac Mills that would have an impact on riverbank access. Much of the site is edged with a retaining wall along the river making a continuous river path problematic. Public access may have to be diverted along Knight Street to get around the inaccessible areas.

We are delighted to be working in a city that actively seeks ways to enhance the quality of life for its citizens. Best wishes for success.

Sincerely,

John Giangregorio

Lew George

Picerne Real Estate Group
Greenwich Village Apartments
300 Lambert Lind Highway
Warwick, RI 02886-1171



Margie Ryan

February 15, 2002

Mayor Scott Avedisian
City of Warwick
City Hall Annex
3275 Post Road
Warwick, RI 02886-7191

Dear Mayor:

As someone who works with the elderly and disabled every day, I was delighted to learn of plans to build a Pawtuxet River Walk! Greenwich Village, as you may know, is a wonderful affordable housing community of 200 units in the Pontiac section of Warwick. The senior citizens and individuals with disabilities housed here certainly would benefit from a "safe and scenic pedestrian pathway along both sides of the Pawtuxet River".

Three major Section 8 developments lie near the proposed link to Pontiac Village, which means the project will assist not just our facility, but a total of 450 units of affordable housing. We are especially "on-board" with such proposed amenities as increased street lighting, benches, signage and trash receptacles, as well as pedestrian bridges which would provide scenic overlooks and pedestrian connections to destinations on both sides of the river. I refer to retail shops in and near the malls, movie theaters, hotels, CCRI and a bike path.

Because Greenwich Village prides itself on being a clean, safe, and friendly community, it is on its behalf and that of Picerne Real Estate Group that I pledge our staunch and continued support of the River Walk proposal. The needs of many elderly and disabled Warwick residents will be better served if it becomes a reality.

Please let my office know if I can be of any assistance. Contact me at (401) 732-3226 any weekday.

Sincerely,

KMPine

Kristin M. Pine, Property Manager
Greenwich Village Apartments
Picerne Real Estate Group

P I C E R N E M A N A G E M E N T

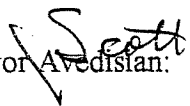
75 Lambert Lind Highway, Warwick, RI 02886 • Tel. 401-732-3700 • Fax 401-738-6452

Arizona • Florida • Georgia • Nevada • Puerto Rico • Rhode Island • Washington DC

CITY OF WARWICK
PLANNING DEPARTMENT

February 5, 2002

Mayor Scott Avedisian
City of Warwick
3275 Post Road
Warwick, RI 02886-7191

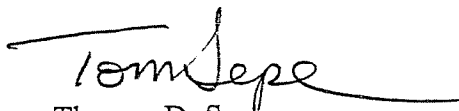
Dear Mayor  Avedisian:

The Community College of Rhode Island is pleased to support the City of Warwick's proposal to construct a safe and scenic pedestrian walkway along both sides of the Pawtuxet River. The proposed Pawtuxet River Walk would provide a cohesive element to a sprawling area that includes elderly housing, retail malls and the historic Pontiac Mill complex.

The CCRI Knight Campus, located directly across from the Rhode Island Mall, serves approximately 7,500 commuter students each semester. The pedestrian river walk would be an attractive benefit for our population and we would welcome the opportunity to work with the city on this worthwhile project.

I look forward to your successful completion of the project and would be happy to assist you in any way we can.

Sincerely,


Thomas D. Sepe
President

C: Stephen F. Marginson, Dean of Administration

LINDA H. SULLIVAN
DIRECTOR OF HUMAN SERVICES

KATHLEEN A. MCNAMEE
DIRECTOR OF SENIOR SERVICES



SCOTT AVEDISIAN
MAYOR

RECEIVED

FEB 04 2002

CITY OF WARWICK
PLANNING DEPARTMENT

CITY OF WARWICK
DEPARTMENT OF HUMAN SERVICES
BUTTONWOODS SENIOR CENTER
3027 WEST SHORE ROAD
WARWICK, RHODE ISLAND 02886
(401) 732-0140
T.D.D. (401) 738-5873

January 31, 2002

Honorable Scott Avedisian
Warwick City Hall
3275 Post Road
Warwick, RI 0286

Dear Mayor Avedisian,

I am pleased to support the City of Warwick's proposed Pawtuxet River Walk Project. The Riverwalk would create not only community cohesiveness but lend a sense of character to that area. The many residents of the senior housing units located in that area would use the Riverwalk particularly the pedestrian pathway. The proposed amenities, which include lighting and benches, are particularly attractive to Warwick's mature adults.

Our maturing population is very interested in health and local activities. This project would provide a link to a variety of recreational activities and at the same time create a wonderful sense of community and character to Warwick.

Again, I am pleased to support this local initiative.

Sincerely,

Kathleen McNamee
Director of Senior Services

RECEIVED

Pontiac Enterprises
January 28, 2002

JAN 30 2002

CITY OF WARWICK
PLANNING DEPARTMENT

Honorable Scott Avedisian
Warwick City Hall
Warwick, R.I. 02886

Dear Mayor Avedisian,

I am writing this letter on behalf of the owners of Pontiac Mills; Mr. Fazzano, Mrs. Gasbarro and Mr. Donovan. We support the proposal to build a Pawtuxet River Walk.

We understand that this proposal would encompass a pedestrian pathway along both sides of the Pawtuxet River that would link this mill complex with the surrounding villages, malls, college etc. With the upcoming development of Pontiac Mills we feel that the Pawtuxet River Walk will only enhance and add to the allure we are trying to create so that Pontiac Mills can become a destination area for the City of Warwick as well as the State of Rhode Island.

We welcome the Pawtuxet River Walk proposal as a great accompaniment to our design for the future of Pontiac Mills.

Sincerely,



Florence M. Nelson
General Manager
Pontiac Enterprises
Pontiac Mills



RECEIVED

JAN 31 2002

CITY OF WARWICK
PLANNING DEPARTMENT

January 25, 2002

Mayor Scott Avedisian
City of Warwick
3275 Post Road
Warwick, RI 02886

Dear Mayor Avedisian,

I am writing in support of Warwick's proposal to build a Pawtuxet River Walk. This project has the positive attributes of serving an existing developed area and to providing pedestrian connections between residential, commercial, and recreational activity centers in the community. These design features are both complementary to the transit services that RIPTA provides.

Two of RIPTA's major transit destinations, Warwick Mall and Rhode Island Mall, abut to the proposed Pawtuxet River Walk. The River walk will provide pedestrian mobility for area residents and improve their access to public transit services. I support this project as contributing to the quality of life for the community and encouraging use of RIPTA transit service.

Sincerely,

Mark R. Therrien
Assistant General Manager

MARK T. BRENNAN & CO., INC.

REAL ESTATE DEVELOPMENT

100 Warwick Mall • Warwick, RI 02886
Phone (401) 732-0800 • Fax (401) 732-1222

February 7, 2002

The Honorable Scott Avedisian
Mayor of Warwick
Warwick City Hall
3275 Post Road
Warwick, RI 02886-7191

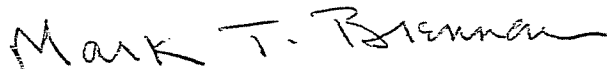
Re: Proposed Pawtuxet Riverwalk

Dear Mayor Avedisian,

The purpose of this letter I am writing on behalf of Warwick Mall is to support a concept recently introduced to us by Margaret Ryan from the Warwick Planning Department. As we understand it, the City is giving consideration to creating a River Walk on both sides of the Pawtuxet River for pedestrian recreation and property access. We feel the concept is indeed a very good one and Warwick Mall would be interested in seeing this become a reality. Naturally, we would want to have input as to how pedestrians might access our property and would expect to be somehow involved in the planning process.

By copy of this letter to Margaret Ryan, I am letting her know of our endorsement and invite her to contact me directly with any further questions and/or input.

Sincerely,



Mark T. Brennan

Cc: Margaret Ryan, Warwick Planning Department ✓
Dan Bliss, Aram Garabedian, Gary Garabedian – Warwick Mall

APPENDIX F

PROVIDENCE JOURNAL ARTICLES



Plans afoot for walkway along Pawtuxet
01:00 AM EST on Friday, January 7, 2005

BY ZACHARY R. MIDER
Journal Staff Writer

WEST WARWICK -- A local panel has been plotting boardwalks, paths and footbridges along a long-neglected stretch of the Pawtuxet River.

The Riverwalk Committee, appointed by the Town Council, is directing the creation of a 1.4-mile walkway from the Agawam Mill, near Centerville Road, to the Royal Mills complex, on Providence Street in Riverpoint.

The \$3-million state grant that launched the project will be enough to pay for about half of the walkway's length, said David E. Perry, the committee chairman, in a recent interview.

The committee is seeking more grants to help finish the project, which will likely require buying some property. It is also considering moving a historic bridge from Coventry to fit into the plan.

The Riverwalk project was launched in 2002, when the state's voters approved the \$3-million grant as part of a bond package that included cultural projects around the state.

West Warwick owes its industrial heritage to the power of the Pawtuxet, but "the river in this town has been pretty much out of sight and out of mind," Perry said.

He described a recent tour of the walkway route, when the committee came upon a blue heron skimming along the water. "It's a gorgeous sight," he said.

About \$1.7 million is earmarked for public-access improvements around the Royal Mills. The walkway is expected to pass through the historic complex, which a developer is converting into housing.

The remaining money should be enough to complete a walkway from Royal Mills to the Arctic Mill, on Factory Street, Perry said.

Most of that route would be an eight-foot-wide path made of PolyPavement, a "natural soil pavement" product that the committee has been testing. It would run along the east bank of the river, on land owned by the town, providing a safe route for sports teams to get from the middle and high schools, on Factory Street, to the ballfields at Riverpoint Park.

At Factory Street, the committee has been weighing options for a footbridge. An early plan involving a covered bridge has been scrapped as too expensive and unsafe, Perry said. The committee considered building a bridge where one used to stand, along the top of the nearby dam, and hired a diver to inspect the footings. But that option, too, was scrapped, because the bridge would have to be built too high to stay clear of flood-level waters.

Pawlowski Associates, of Providence, which is working with the committee on the design, is now proposing a footbridge that would snake underneath the existing Factory Street bridge.

The southern stretch of the Riverwalk, from the Arctic Bridge to Centerville, will require more time and money, and more action by the Town Council, Perry said. The planned route runs through residential lots where the town holds sewer easements, but no river frontage. It will also likely involve constructing a boardwalk where a paved path is not feasible.

At the Centerville Mill, which Perry said might some day become residential housing, the committee is considering installing a historic bridge from the Arkwright Mills, in Coventry.

The committee has hired a grant writer and is eyeing awards from the Champlin Foundations and others.

At only one point in the walkway -- the dam at Royal Mills -- would the path be inaccessible to wheelchairs, Perry said.

He said the committee plans to discuss its progress with the Town Council at a special work session on Jan. 25.

RIPTA probes fatal accident; [ALL Edition]
The Providence Journal. Providence, R.I.: Dec 9, 1998. pg. B.03

Dateline: WARWICK
Section: NEWS

Text Word Count 261

Abstract (Document Summary)

Helen D. Pevin, 82, had gotten off the bus at Knight Street and Lambert Lind Highway when she apparently stumbled off the curb and fell into the path of the departing bus, the state police said. The driver of the 40-foot bus, unaware of Pevin's fall, headed south on Lambert Lind Highway. Pevin, of 280 Washington St., Providence, was struck by the rear wheel and died at the scene, the state police said.

Full Text (261 words)

Copyright Providence Journal/Evening Bulletin Dec 9, 1998

The Rhode Island Transit Authority is conducting an internal investigation into a bus accident that killed an elderly woman Monday morning.

Helen D. Pevin, 82, had gotten off the bus at Knight Street and Lambert Lind Highway when she apparently stumbled off the curb and fell into the path of the departing bus, the state police said. The driver of the 40-foot bus, unaware of Pevin's fall, headed south on Lambert Lind Highway. Pevin, of 280 Washington St., Providence, was struck by the rear wheel and died at the scene, the state police said.

Lee Beliveau, a RIPTA spokesman, said preliminary evidence shows that the driver could not have prevented the accident. The man, whom Beliveau declined to identify, has not yet returned to work.

"A number of witnesses said there was nothing the driver could have done," Beliveau said. "The operator is shaken up by what happened. We are concerned for him and that he gets the proper counseling he may need."

The transit authority's policies dictate that a driver is relieved of duties after an accident, while supervisors probe the cause. By federal law, the driver is tested for drugs immediately after the accident. The vehicle is also checked to ensure that it is in good working order. The bus involved in the accident was inspected and was released back into service within hours. The driver will return to work when he feels ready.

"The 535 men and women of the Rhode Island Transit Authority send their condolences to the (Pevin) family," Beliveau said. "It was a tragic accident."